

FCC and ISED Test Report

DOMO Tactical Communications (DTC)

SOL8SDR-M-210250, Model:

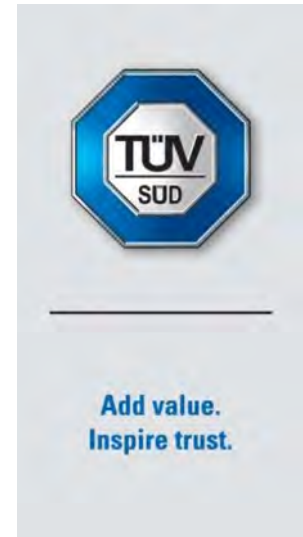
In accordance with FCC 47 CFR Part 15C, ISED RSS-247
and ISED RSS-GEN
(2.4 GHz COFDM Digital Transceiver)

Prepared for: DOMO Tactical Communications (DTC)
The Cobham Centre
Parkway
Fusion 2 Solent Business Park
Fareham
PO15 7AB, United Kingdom

FCC ID: XRF SDRM210250BLUSDR6 IC: 8638A-BLUSDR6SDRM

COMMERCIAL-IN-CONFIDENCE

Document 75959108-01 Issue 02



SIGNATURE

NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Steve Marshall	Senior Engineer	Authorised Signatory	18 October 2023

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15C, ISED RSS-247 and ISED RSS-GEN. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Pier-Angelo Lorusso	18 October 2023	
	Thomas Biddlecombe	18 October 2023	
	Ahmad Javid	18 October 2023	

FCC Accreditation

492497/UK2010 Octagon House, Fareham Test Laboratory

ISED Accreditation

12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15C: 2021, ISED RSS-247: Issue 2 (02-2017) and ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021) for the tests detailed in section 1.3.



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ACCREDITATION

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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	13-October-2023
2	Added missing column for 20 MHz bandwidth to table 4 in section 1.4.	18-October-2023

Table 1

1.2 Introduction

Applicant	DOMO Tactical Communications (DTC)
Manufacturer	DOMO Tactical Communications (DTC)
Model Number(s)	SA4750
Serial Number(s)	062023 & 062031
Hardware Version(s)	Release 2
Software Version(s)	V7.2.4
Number of Samples Tested	2
Test Specification/Issue/Date	FCC 47 CFR Part 15C: 2021 ISED RSS-247: Issue 2 (02-2017) ISED RSS-GEN: Issue 5 (04-2018) + A2 (02-2021)
Order Number	PO-064263-1
Date	04-August-2023
Date of Receipt of EUT	10-August-2023
Start of Test	10-August-2023
Finish of Test	24-August-2023
Name of Engineer(s)	Pier-Angelo Lorusso, Thomas Biddlecombe and Ahmad Javid
Related Document(s)	ANSI C63.10 (2020) ANSI C63.10 (2013) KDB 662911 D01 v02r01



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15C, ISSED RSS-247 and ISSED RSS-GEN is shown below.

Section	Specification Clause			Test Description	Result	Comments/Base Standard
	Part 15C	RSS-247	RSS-GEN			
Configuration and Mode: 2.4 GHz COFDM Digital Transceiver						
2.1	15.205	3.3	8.10	Restricted Band Edges	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.2	15.247 (a)(2)	5.2	6.7	Emission Bandwidth	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.3	15.247 (b)	5.4	6.12	Maximum Conducted Output Power	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01 ANSI C63.10 (2013)
2.4	15.247 (d)	5.5	-	Authorised Band Edges	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.5	15.209 & 15.247 (d)	3.3 & 5.5	6.13 & 8.9	Spurious Radiated Emissions	Pass	ANSI C63.10 (2020) ANSI C63.10 (2013)
2.6	15.247 (e)	5.2	6.12	Power Spectral Density	Pass	ANSI C63.10 (2020) KDB 662911 D01 v02r01 ANSI C63.10 (2013)
	15.203	-	-	Antenna Requirement	N/T	Professionally installed. Refer to application form for further details.

Table 2



1.4 Application Form

Equipment Description

Technical Description: <i>(Please provide a brief description of the intended use of the equipment including the technologies the product supports)</i>		The SOL8 SDR-M, also known as BluSDR-6 software defined radio is an ultra-miniature COFDM digital transceiver intended for integration into unmanned vehicles, communications infrastructure and bodyworn surveillance applications. Capable of video and IP data transmission providing greater than 87Mb/s over a selectable bandwidth of between 1.25-20MHz.	
Manufacturer:		Domo Tactical Communications	
Model:		SOL8SDR-M-210250	
Part Number:		SA4750	
Hardware Version:		Release 2	
Software Version:		V7.2.4	
FCC ID of the product under test – see guidance here		XRF SDRM210250BLUSDR6	
IC ID of the product under test – see guidance here		8638A-BLUSDR6SDRM	
Device Category	Mobile ☐	Portable ☒	Fixed ☒
Equipment is fitted with an Audio Low Pass Filter		Yes ☐	No ☐

Table 3

Intentional Radiators

Technology	COFDM	COFDM	COFDM	COFDM	COFDM	COFDM	COFDM
Frequency Range (MHz to MHz)	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5
Conducted Declared Output Power (dBm)	23dBm	23dBm	23dBm	23dBm	23dBm	23dBm	23dBm
Antenna Gain (dBi)	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)	1.25	1.5	1.75	2.5	3	3.5	5
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK
ITU Emission Designator	1M25D7W	1M50D7W	1M75D7W	2M50D7W	3M00D7W	3M50D7W	5M00D7W
Bottom Frequency (MHz)	2402.500	2402.625	2403.063	2404.375	2405.250	2406.125	2408.750
Middle Frequency (MHz)	2441.750	2441.750	2441.750	2441.750	2441.750	2441.750	2441.750
Top Frequency (MHz)	2479.750	2480.125	2479.563	2477.875	2476.750	2475.625	2472.250



Technology	COFDM	COFDM	COFDM	COFDM	COFDM	COFDM	COFDM	COFDM
Frequency Range (MHz to MHz)	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5	2400 – 2483.5
Conducted Declared Output Power (dBm)	23dBm	23dBm	23dBm	23dBm	23dBm	23dBm	23dBm	23dBm
Antenna Gain (dBi)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Supported Bandwidth(s) (MHz) (e.g. 1 MHz, 20 MHz, 40 MHz)	6	7	8	10	12	14	16	20
Modulation Scheme(s) (e.g. GFSK, QPSK etc)	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK	64QAM, QPSK, BPSK
ITU Emission Designator	6M00D7 W	7M00D7 W	8M00D7 W	10M0D7 W	12M0D7 W	14M0D7 W	16M0D7 W	20M0D7 W
Bottom Frequency (MHz)	2410.500	2412.250	2414.000	2417.500	2421.000	2424.500	2428.000	2435.000
Middle Frequency (MHz)	2441.750	2441.750	2441.750	2441.750	2441.750	2441.750	2441.750	2441.750
Top Frequency (MHz)	2470.000	2467.750	2465.500	2461.000	2456.500	2452.000	2447.500	2438.500

Table 4

Un-intentional Radiators

Highest frequency generated or used in the device or on which the device operates or tunes	2479.750MHz
Lowest frequency generated or used in the device or on which the device operates or tunes	2402.50MHz
Class A Digital Device (Use in commercial, industrial or business environment) ☒	
Class B Digital Device (Use in residential environment only) ☐	

Table 5



AC Power Source

AC supply frequency:		Hz
Voltage		V
Max current:		A
Single Phase ☐ Three Phase ☒		

Table 6

DC Power Source

Nominal voltage:	12	V
Extreme upper voltage:	18	V
Extreme lower voltage:	8	V
Max current:	1.5	A

Table 7

Battery Power Source

Voltage:		V
End-point voltage:		V (Point at which the battery will terminate)
Alkaline ☐ Leclanche ☐ Lithium ☐ Nickel Cadmium ☐ Lead Acid* ☐ *(Vehicle regulated)		
Other ☐	Please detail:	

Table 8

Charging

Can the EUT transmit whilst being charged	Yes ☐ No ☒
---	---

Table 9

Temperature

Minimum temperature:	-20	°C
Maximum temperature:	+50	°C

Table 10

Cable Loss

Adapter Cable Loss (Conducted sample)		dB
--	--	----

Table 11



Antenna Characteristics

Antenna connector ☒ MMCX (m) right angle			State impedance	50	Ohm
Temporary antenna connector ☐			State impedance		Ohm
Integral antenna ☐	Type:		Gain		dBi
External antenna ☒	Type:	Dual band omni, vert. polarized	Gain	1.8	dBi

For external antenna only:
Standard Antenna Jack ☒ If yes, describe how user is prohibited from changing antenna (if not professional installed):

The SOL8 SDR-M / BluSDR-6 is a software defined radio conceived for integration into small unmanned (drone) platforms, sold to unmanned system manufacturers as part of a product package containing DTC's officially recommended antennas. Due to the strict size and access constraints of installation into a small drone the SDR-M / BluSDR-6 allows the system integrator to temporarily remove the antenna and coaxial cable from the radio during the installation process before reconnecting it.

Equipment is only ever professionally installed ☐

Non-standard Antenna Jack ☐

All part 15 applications will need to show how the antenna gain was derived either from a manufacturer data sheet or a measurement. Where the gain of the antenna is inherently accounted for as a result of the measurement, such as field strength measurements on a part 15.249 or 15.231 device, so the gain does not necessarily need to be verified. However, enough information regarding the construction of the antenna shall be provided. Such information maybe photographs, length of wire antenna etc.

Table 12

Ancillaries (if applicable)

Manufacturer:	Edimax	Part Number:	EU-4306
Model:	USB Network Adapter	Country of Origin:	Taiwan
Manufacturer:	Powerpax	Part Number:	SW4047G
Model:	12VDC 2A Power Supply	Country of Origin:	China

Table 13

I hereby declare that the information supplied is correct and complete.

Name: Nathan Rijckmans
Position held: Product Manager, Broadcast Wireless
Date: 09 October 2023



1.5 Product Information

1.5.1 Technical Description

The SOL8 SDR-M, also known as BluSDR-6 software defined radio is an ultra-miniature COFDM digital transceiver intended for integration into unmanned vehicles, communications infrastructure and body worn surveillance applications. Capable of video and IP data transmission providing greater than 87Mb/s over a selectable bandwidth of between 1.25-20MHz.

1.5.2 Additional Product Information

The operating frequency of the device under test (DUT) is dependent upon the channel bandwidth. In order to comply with the restricted band edge requirements this channel plan was updated during the test schedule. All tests other than Restricted and Authorised Band Edges were therefore performed on frequencies for bottom and top channels that are deemed representative of the performance of the DUT and considered acceptable to demonstrate compliance.

The applicant takes responsibility for ensuring that in normal operation, the user will not be able to access channels outside of the range of operation that have been used to demonstrate compliance with restricted and authorised band edge and the frequencies for each channel bandwidth is confirmed in the application form.

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme.

The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Model: SA4750, Serial Number: 062023			
0	As supplied by the customer	Not Applicable	Not Applicable
Model: SA4750, Serial Number: 062031			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 14



1.8 Test Location

TÜV SÜD conducted the following tests at our Octagon House Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: 2.4 GHz COFDM Digital Transceiver		
Restricted Band Edges	Pier-Angelo Lorusso	UKAS
Emission Bandwidth	Thomas Biddlecombe	UKAS
Maximum Conducted Output Power	Thomas Biddlecombe	UKAS
Authorised Band Edges	Pier-Angelo Lorusso	UKAS
Spurious Radiated Emissions	Ahmad Javid	UKAS
Power Spectral Density	Thomas Biddlecombe	UKAS

Table 15

Office Address:

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire
PO15 5RL
United Kingdom



2 Test Details

2.1 Restricted Band Edges

2.1.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.205
ISED RSS-247, Clause 3.3
ISED RSS-GEN, Clause 8.10

2.1.2 Equipment Under Test and Modification State

SA4750, S/N: 062023 - Modification State 0

2.1.3 Date of Test

22-August-2023 to 24-August-2023

2.1.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.10.5 and 11.12.2.

The test was performed in a conducted method using a power splitter, 20 dB attenuator and required SMA cables. The EUT was connected (as a Link) to another EUT via the power splitter to allow duplex connectivity.

This test was performed on the lowest and highest frequency for the narrowest (1.25 MHz) and widest (20 MHz) channel bandwidths only.

Field strength limits were converted to EIRP of -21.2 dBm (pk) & -41.2 dBm (avg).

The following conversion were applied to convert from dBμV/m to EIRP:

$$\text{EIRP} = E(\text{dB}\mu\text{V/m}) - 95.2$$

The limits were further adjusted to include the antenna gain of 1.8 dBi and to account for the gain due to multiple antennas as per KDB 662911 D01 E) c):

$$(10\text{Log}N_{\text{ANT}} \text{ where } N = 2) = 3 \text{ dB.}$$

The adjusted limits were -26 dBm (pk) & -46 dBm (avg).

Since the EUT did not have 100% duty cycle a DCCF was calculated and added to the resultant average restricted band edge measurement.

Plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

2.1.5 Environmental Conditions

Ambient Temperature	21.2 - 23.6 °C
Relative Humidity	54.6 - 64.2 %

2.1.6 Test Results

2.4 GHz COFDM Digital Transceiver

Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Average (dBm)	Duty Cycle Correction Factor (dB)	Limit (dBm)	Corrected (dBm)	Margin (dBm)
Bottom	2402.50	1.25	2390	-56.69	8.87	-46.00	-47.82	-1.82
Top	2478.50	1.25	2483.5	-57.31	9.23	-46.00	-47.68	-1.68

Table 16 - Port A_Channel_MIMO_SDM_X Plane, Restricted Band Edge

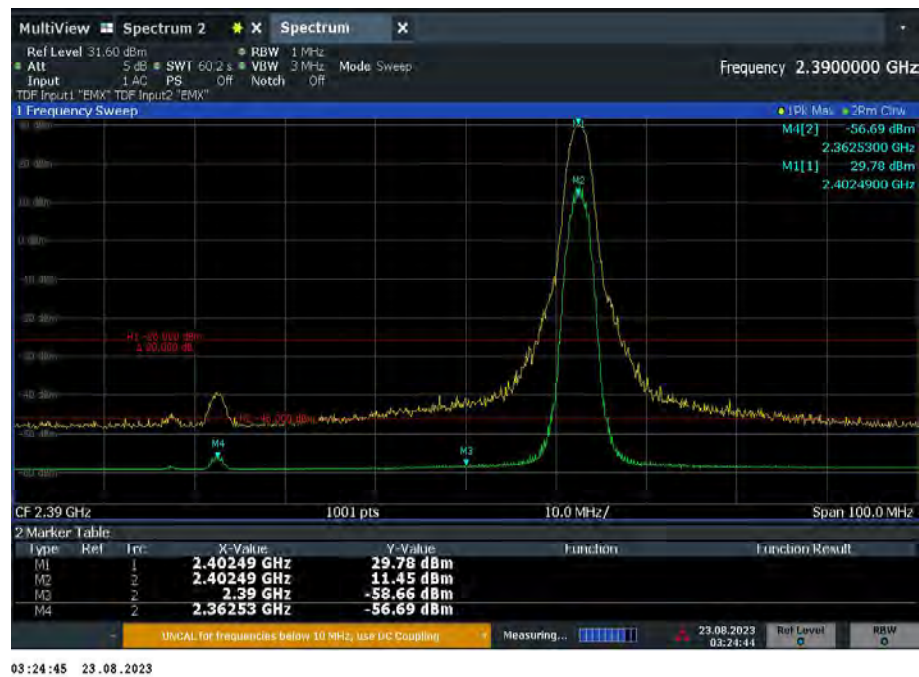


Figure 1 - Port A_Bot_Channel_MIMO_SDM_1.25MHz_X Plane, 2402.50 MHz, Band Edge Frequency 2390 MHz



Figure 2 - Port A_Top_Channel_MIMO_SDM_1.25MHz_X Plane, 2478.50 MHz, Band Edge
Frequency 2483.5 MHz



Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Average (dBm)	Duty Cycle Correction Factor (dB)	Limit (dBm)	Corrected (dBm)	Margin (dBm)
Bottom	2435	20	2390	-55.49	8.79	-46.00	-46.70	-0.70
Top	2438.50	20	2483.5	-55.69	8.71	-46.00	-46.78	-0.78

Table 17 - Port A_Channel_MIMO_SDM_X Plane, Restricted Band Edge



Figure 3 - Port A_Bot_Channel_MIMO_SDM_20MHz_X, 2435 MHz, Band Edge Frequency 2390 MHz

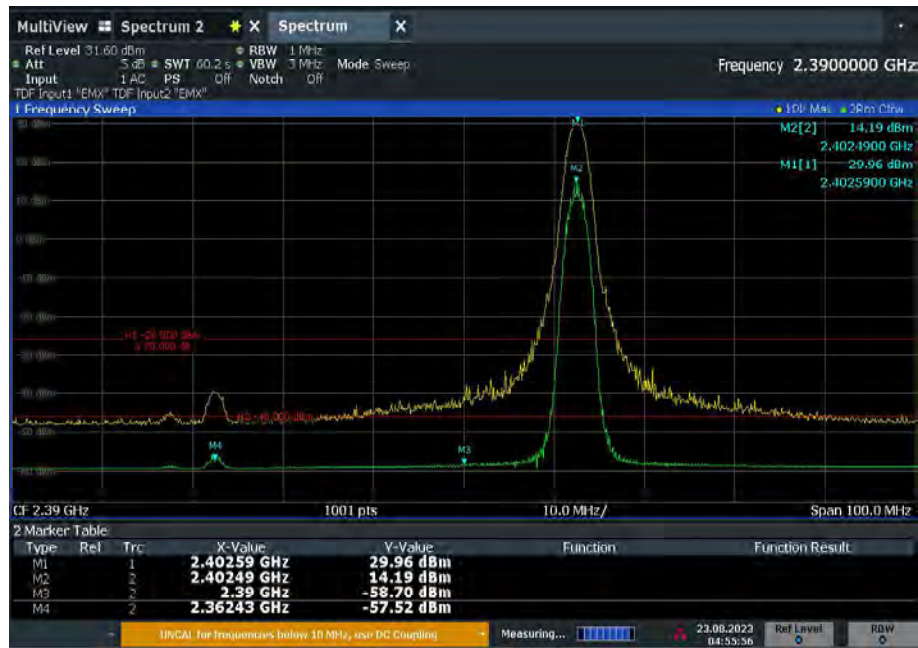


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Figure 4 - Port A_Top_Channel_MIMO_SDM_20MHz_X Plane, 2438.5 MHz, Band Edge
Frequency 2483.5 MHz

Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Average (dBm)	Duty Cycle Correction Factor (dB)	Limit (dBm)	Corrected (dBm)	Margin (dBm)
Bottom	2402.500	1.25	2390	-57.52	8.87	-46.00	-48.65	-2.65
Top	2479.125	1.25	2483.5	-56.05	9.13	-46.00	-46.92	-0.92

Table 18 - Port B_Channel_MIMO_SDM_X Plane, Restricted Band Edge



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Figure 5 - Port B_Bot_Channel_MIMO_SDM_1.25MHz_X Plane, 2402.5 MHz, Band Edge Frequency 2390 MHz

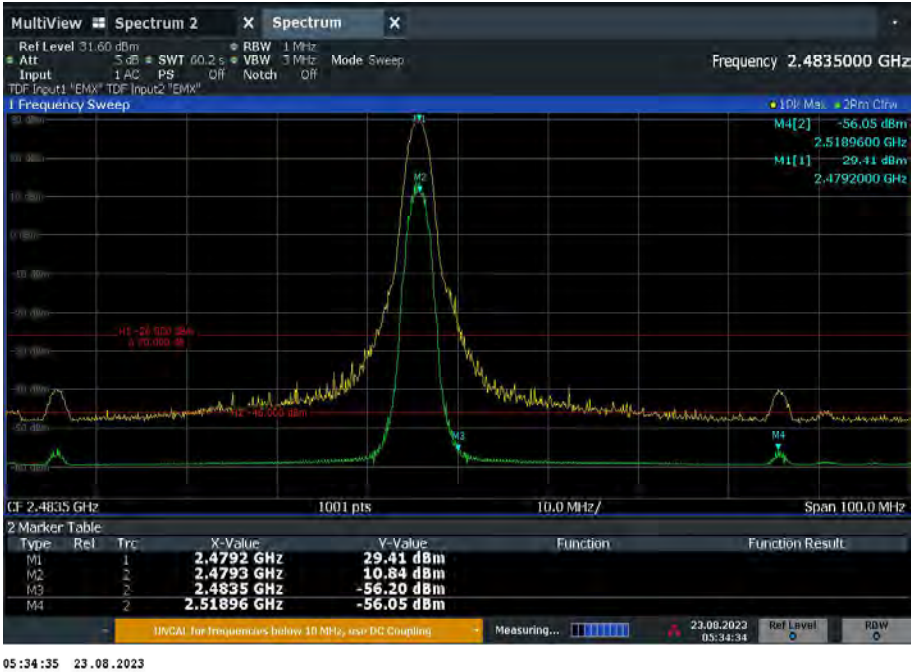


Figure 6 - Port B_Top_Channel_MIMO_SDM_1.25MHz_X Plane, 2479.125 MHz, Band Edge
Frequency 2483.5 MHz

Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Average (dBm)	Duty Cycle Correction Factor (dB)	Limit (dBm)	Corrected (dBm)	Margin (dBm)
Bottom	2435.0	20	2390	-56.63	8.78	-46.00	-47.85	-1.85
Top	2438.50	20	2483.5	-56.44	8.78	-46.00	-47.66	-1.66

Table 19 - Port B_Channel_MIMO_SDM_X Plane, Restricted Band Edge



Figure 7 - Port B_Bot_Channel_MIMO_SDM_20MHz_X Plane, 2435 MHz, Band Edge Frequency 2390 MHz



06:09:07 23.08.2023

Figure 8 - Port B_Top_Channel_MIMO_SDM_20MHz_X Plane, 2438.5 MHz, Band Edge
Frequency 2483.5 MHz



2.1.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Emissions Software	TUV SUD	EmX V3.1.12	5125	-	Software
Screened Room (11)	Rainford	Rainford	5136	36	24-Nov-2024
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	5215	12	09-Jul-2024
Power Splitter, 2 way	Mini-Circuits	ZN2PD2-63-S+	5238	-	O/P Mon
Test Receiver	Rohde & Schwarz	ESW44	5379	12	01-Oct-2023
Thermo-Hygro-Barometer	PCE Instruments	OCE-THB-40	5470	12	20-Apr-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5497	12	18-Apr-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	21-May-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5512	12	21-May-2024
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5518	12	14-Apr-2024
Cable (N-Type to N-Type, 8 m)	Junkosha	MWX221-08000NMSNMS/B	5522	12	14-Apr-2024
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6175	12	19-Jul-2024

Table 20

TU - Traceability Unscheduled

O/P Mon – Output Monitored using calibrated equipment



2.2 Emission Bandwidth

2.2.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (a)(2),
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.7

2.2.2 Equipment Under Test and Modification State

SA4750, S/N 062031 - Modification State 0

2.2.3 Date of Test

10-August-2023 to 21-August-2023

2.2.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.8.1 for 6 dB BW and 6.9.3 for 99% occupied bandwidth measurements.

2.2.5 Environmental Conditions

Ambient Temperature	22.3 - 22.6 °C
Relative Humidity	59.9 - 64.2 %



2.2.6 Test Results

2.4 GHz COFDM Digital Transceiver

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	1.25 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2400.625	1.176	1.164	-	-	≥500.0
2441.500	1.176	1.180	-	-	≥500.0
2482.375	1.172	1.156	-	-	≥500.0

Table 21 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2400.625	1.152	1.148	-	-	-
2441.500	1.152	1.152	-	-	-
2482.375	1.152	1.152	-	-	-

Table 22 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	1.50 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2400.750	1.412	1.420	-	-	≥500.0
2441.500	1.380	1.372	-	-	≥500.0
2482.250	1.408	1.404	-	-	≥500.0

Table 23 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2400.750	1.376	1.372	-	-	-
2441.500	1.376	1.380	-	-	-
2482.250	1.380	1.380	-	-	-

Table 24 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	1.75 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2400.875	1.640	1.616	-	-	≥500.0
2441.500	1.640	1.648	-	-	≥500.0
2482.125	1.632	1.632	-	-	≥500.0

Table 25 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2400.875	1.608	1.616	-	-	-
2441.500	1.616	1.608	-	-	-
2482.125	1.608	1.608	-	-	-

Table 26 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	2.50 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2401.250	2.336	2.312	-	-	≥500.0
2441.500	2.328	2.336	-	-	≥500.0
2481.750	2.336	2.336	-	-	≥500.0

Table 27 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2401.250	2.288	2.288	-	-	-
2441.500	2.304	2.296	-	-	-
2481.750	2.304	2.296	-	-	-

Table 28 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	3.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2401.500	2.752	2.792	-	-	≥500.0
2441.500	2.800	2.768	-	-	≥500.0
2481.500	2.784	2.792	-	-	≥500.0

Table 29 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2401.500	2.760	2.752	-	-	-
2441.500	2.752	2.752	-	-	-
2481.500	2.760	2.752	-	-	-

Table 30 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	3.50 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2401.750	3.252	3.228	-	-	≥500.0
2441.500	3.240	3.228	-	-	≥500.0
2481.250	3.288	3.240	-	-	≥500.0

Table 31 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2401.750	3.216	3.216	-	-	-
2441.500	3.216	3.216	-	-	-
2481.250	3.228	3.216	-	-	-

Table 32 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	5.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402.500	4.660	4.600	-	-	≥500.0
2441.500	4.680	4.680	-	-	≥500.0
2480.500	4.640	4.660	-	-	≥500.0

Table 33 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2402.500	4.600	4.600	-	-	-
2441.500	4.600	4.600	-	-	-
2480.500	4.600	4.580	-	-	-

Table 34 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	6.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2403.000	5.560	5.560	-	-	≥500.0
2441.500	5.580	5.580	-	-	≥500.0
2480.000	5.580	5.600	-	-	≥500.0

Table 35 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2403.000	5.520	5.520	-	-	-
2441.500	5.540	5.540	-	-	-
2480.000	5.520	5.520	-	-	-

Table 36 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	7.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2403.500	6.520	6.480	-	-	≥500.0
2441.500	6.520	6.480	-	-	≥500.0
2479.500	6.500	6.500	-	-	≥500.0

Table 37 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2403.500	6.440	6.440	-	-	-
2441.500	6.440	6.440	-	-	-
2479.500	6.440	6.440	-	-	-

Table 38 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	8.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2404.000	7.420	7.440	-	-	≥500.0
2441.500	7.380	7.400	-	-	≥500.0
2479.000	7.420	7.420	-	-	≥500.0

Table 39 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2404.000	7.360	7.340	-	-	-
2441.500	7.360	7.360	-	-	-
2479.000	7.340	7.360	-	-	-

Table 40 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	10.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405.000	9.280	9.280	-	-	≥500.0
2441.500	9.320	9.320	-	-	≥500.0
2478.000	9.280	9.280	-	-	≥500.0

Table 41 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2405.000	9.200	9.200	-	-	-
2441.500	9.200	9.200	-	-	-
2478.000	9.200	9.200	-	-	-

Table 42 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	12.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2406.000	11.160	11.120	-	-	≥500.0
2441.500	11.160	11.120	-	-	≥500.0
2477.000	11.200	11.120	-	-	≥500.0

Table 43 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2406.000	11.040	11.040	-	-	-
2441.500	11.040	11.040	-	-	-
2477.000	11.040	11.040	-	-	-

Table 44 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	14.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2407.000	13.000	13.040	-	-	≥500.0
2441.500	12.960	12.960	-	-	≥500.0
2476.000	12.960	12.960	-	-	≥500.0

Table 45 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2407.000	12.880	12.880	-	-	-
2441.500	12.880	12.880	-	-	-
2476.000	12.880	12.880	-	-	-

Table 46 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	16.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2408.000	14.880	14.800	-	-	≥500.0
2441.500	14.880	14.840	-	-	≥500.0
2475.000	14.760	14.840	-	-	≥500.0

Table 47 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2408.000	14.720	14.720	-	-	-
2441.500	14.720	14.720	-	-	-
2475.000	14.720	14.720	-	-	-

Table 48 - 99% Bandwidth Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (a)(2) RSS-247 5.2 a)	Test Method(s):	C63.10 6.9.3 C63.10 11.8.1
Additional Reference(s):	-		

DUT Configuration			
Mode:	20.00 MHz	Duty Cycle (%):	-
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	6 dB Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2410.000	18.600	18.480	-	-	≥500.0
2441.500	18.600	18.600	-	-	≥500.0
2473.000	18.600	18.600	-	-	≥500.0

Table 49 - 6 dB Bandwidth Results

Test Frequency (MHz)	99% Bandwidth (MHz)				Limit (kHz)
	A	B	C	D	
2410.000	18.360	18.360	-	-	-
2441.500	18.360	18.360	-	-	-
2473.000	18.360	18.360	-	-	-

Table 50 - 99% Bandwidth Results



Protocol	6 dB Bandwidth (MHz)	
	Minimum	Maximum
1.25 MHz	1.156	1.180
1.50 MHz	1.372	1.420
1.75 MHz	1.616	1.648
2.50 MHz	2.312	2.336
3.00 MHz	2.752	2.800
3.50 MHz	3.228	3.288
5.00 MHz	4.600	4.680
6.00 MHz	5.560	5.600
7.00 MHz	6.480	6.520
8.00 MHz	7.380	7.440
10.00 MHz	9.280	9.320
12.00 MHz	11.120	11.200
14.00 MHz	12.960	13.040
16.00 MHz	14.800	14.880
20.00 MHz	18.480	18.600

Table 51 - 6 dB Bandwidth Summary Results - MIMO SDM

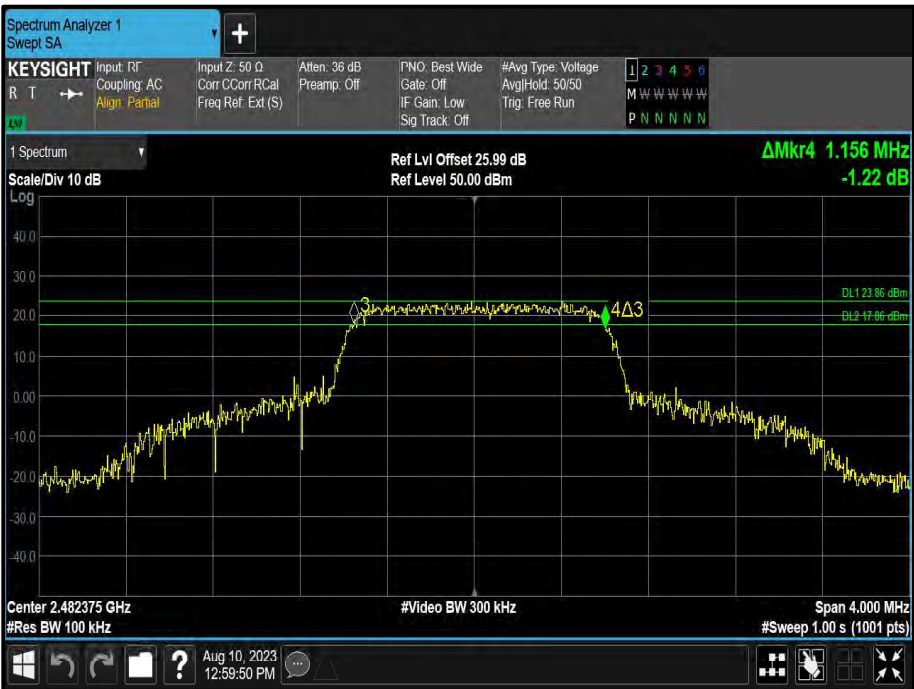


Figure 9 - 1.25 MHz Minimum 6 dB EBW

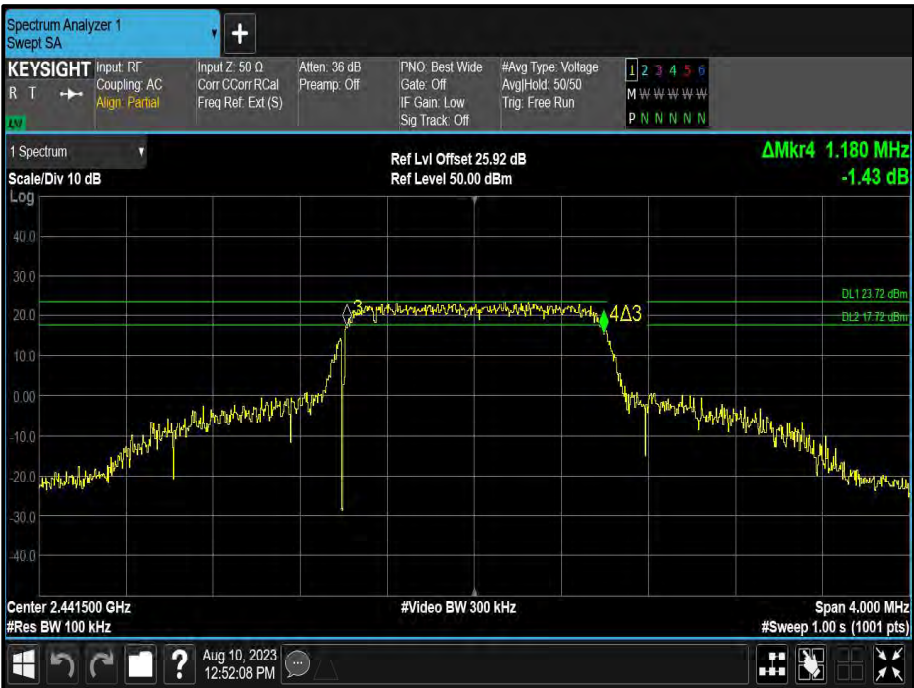


Figure 10 - 1.25 MHz Maximum 6 dB EBW



Figure 11 - 1.50 MHz Minimum 6 dB EBW



Figure 12 - 1.50 MHz Maximum 6 dB EBW



Figure 13 - 1.75 MHz Minimum 6 dB EBW

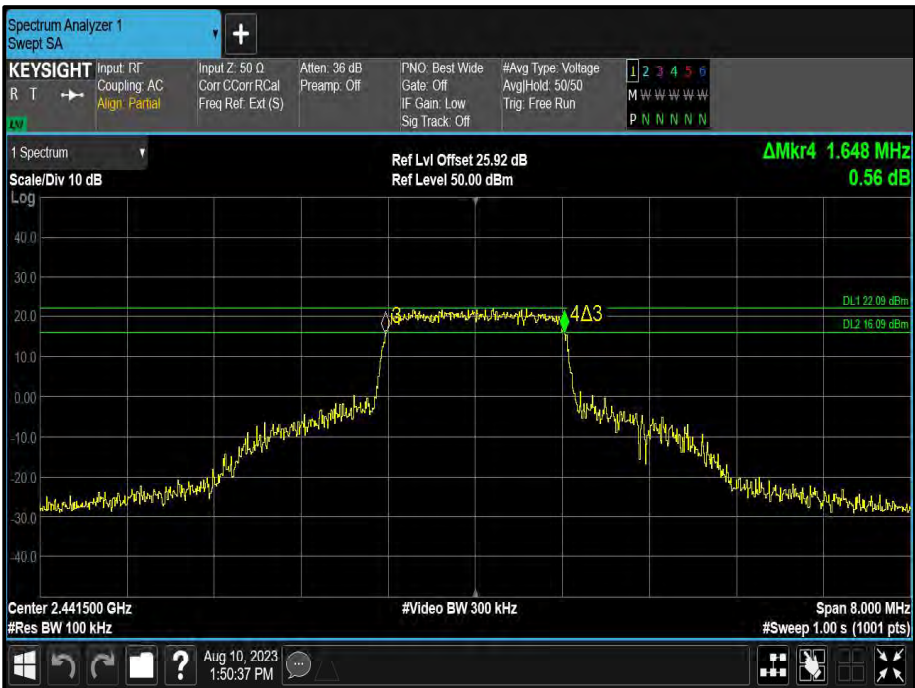


Figure 14 - 1.75 MHz Maximum 6 dB EBW

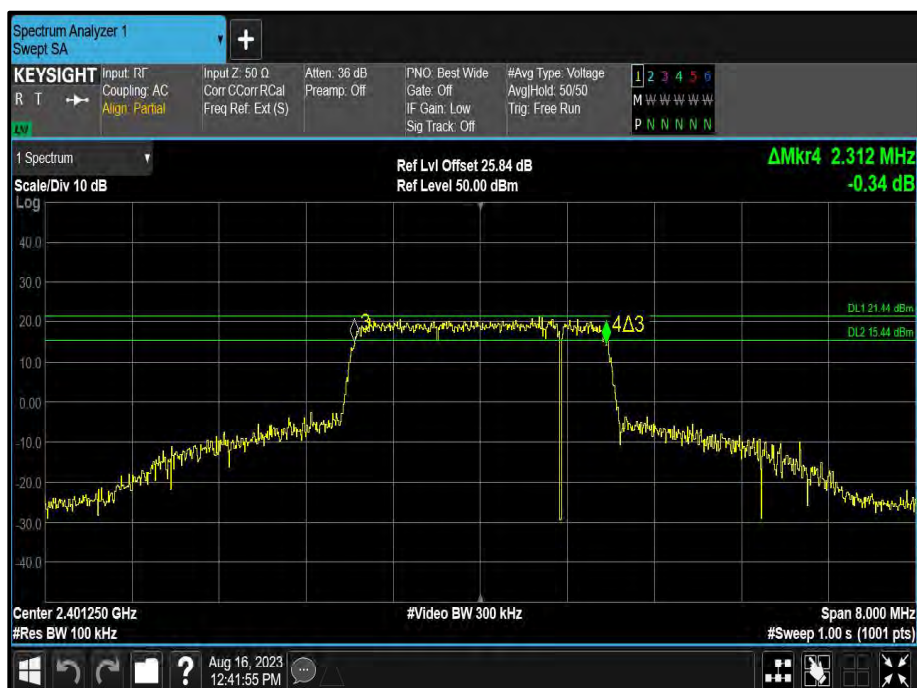


Figure 15 - 2.50 MHz Minimum 6 dB EBW

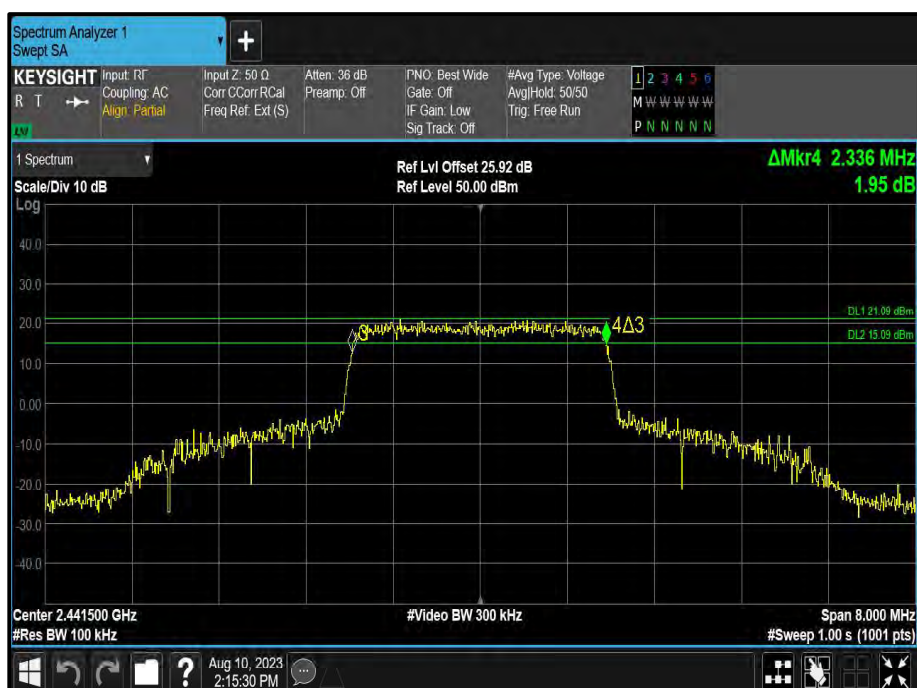


Figure 16 - 2.50 MHz Maximum 6 dB EBW

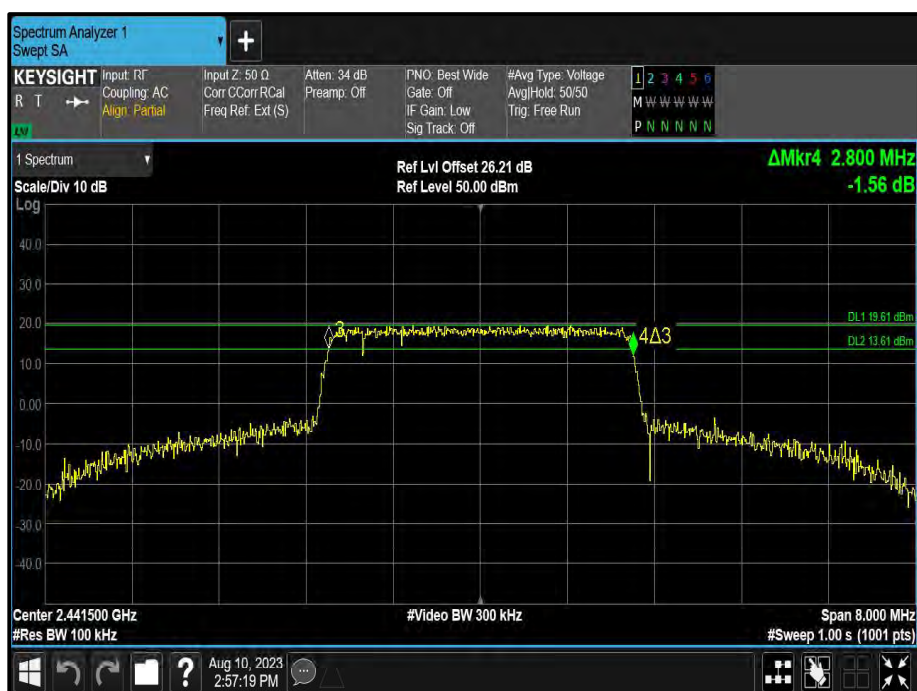




Figure 19 - 3.50 MHz Minimum 6 dB EBW



Figure 20 - 3.50 MHz Maximum 6 dB EBW

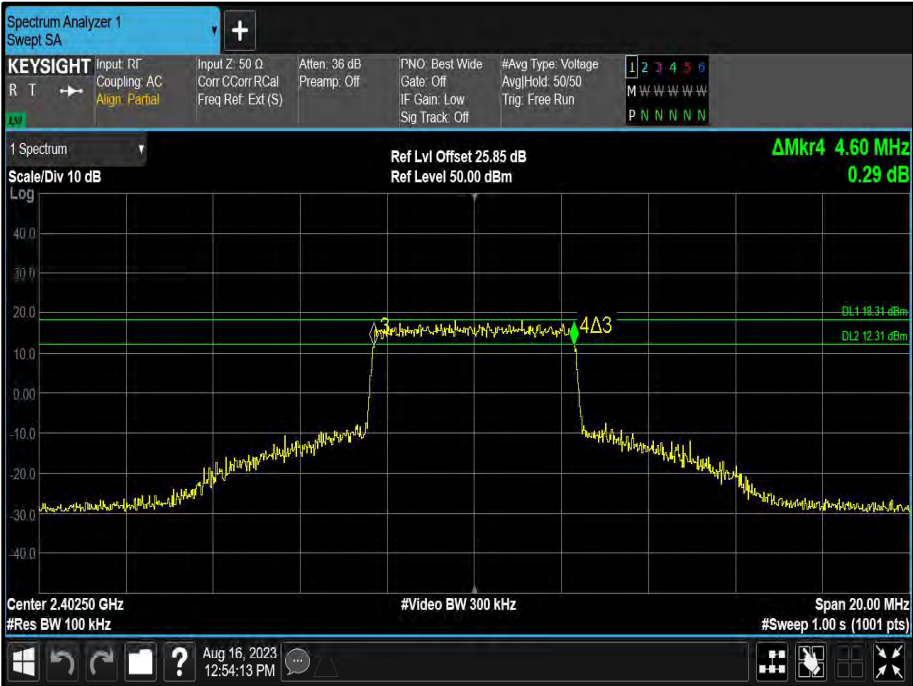


Figure 21 - 5.00 MHz Minimum 6 dB EBW



Figure 22 - 5.00 MHz Maximum 6 dB EBW

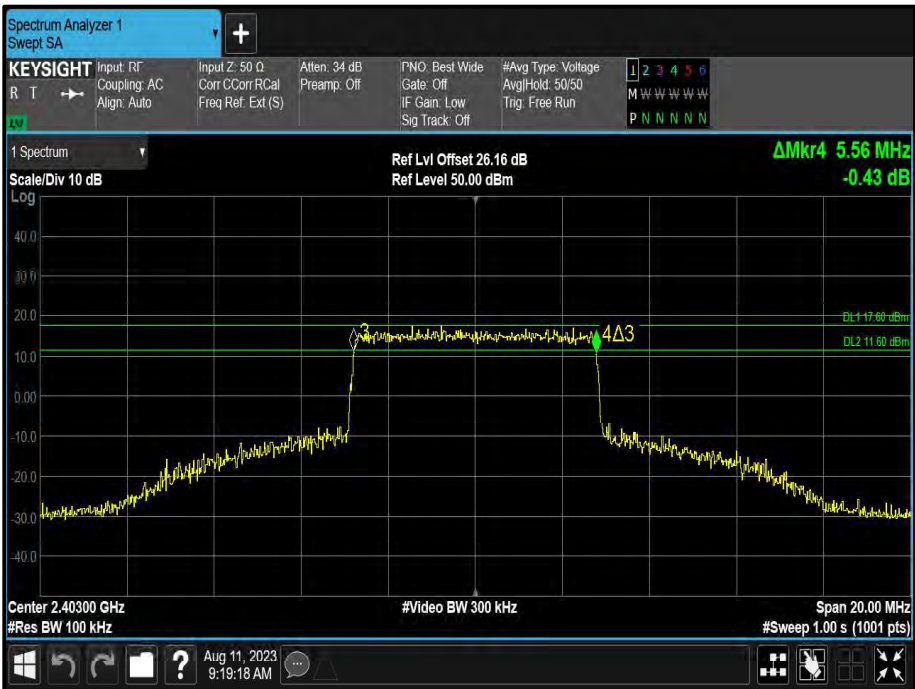


Figure 23 - 6.00 MHz Minimum 6 dB EBW

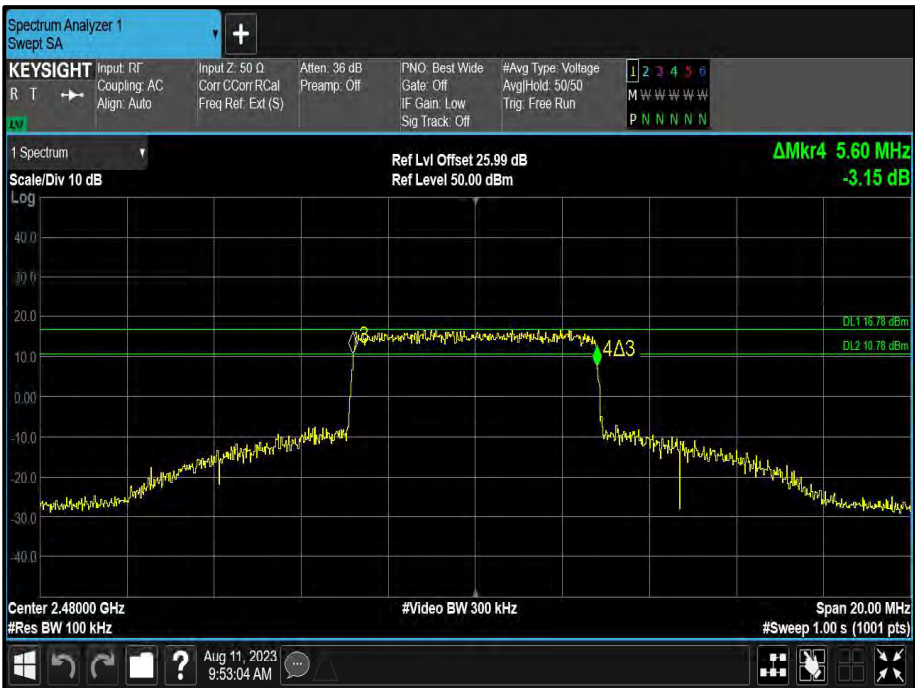


Figure 24 - 6.00 MHz Maximum 6 dB EBW

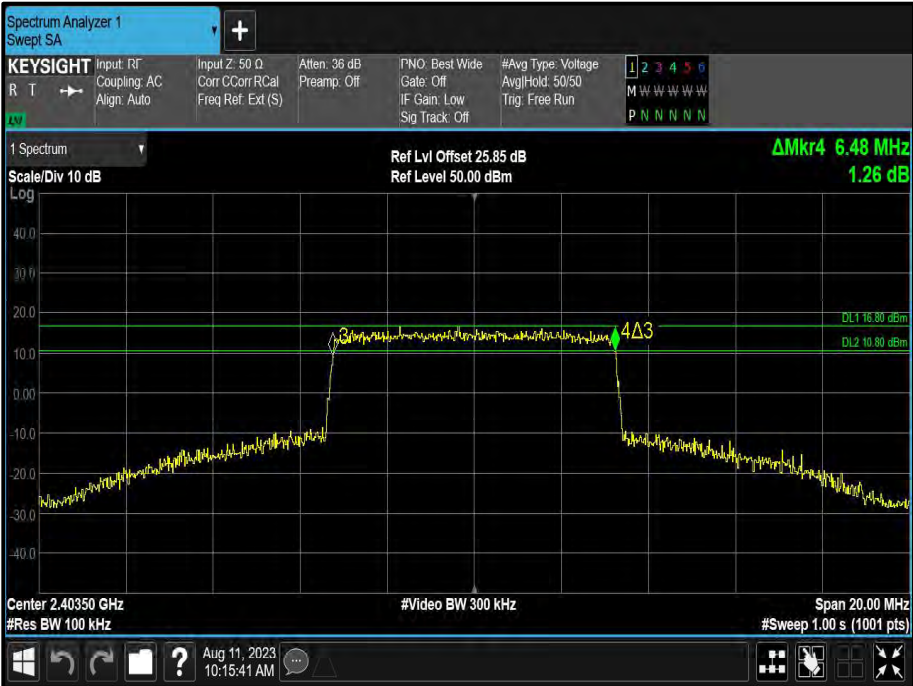


Figure 25 - 7.00 MHz Minimum 6 dB EBW



Figure 26 - 7.00 MHz Maximum 6 dB EBW



Figure 27 - 8.00 MHz Minimum 6 dB EBW

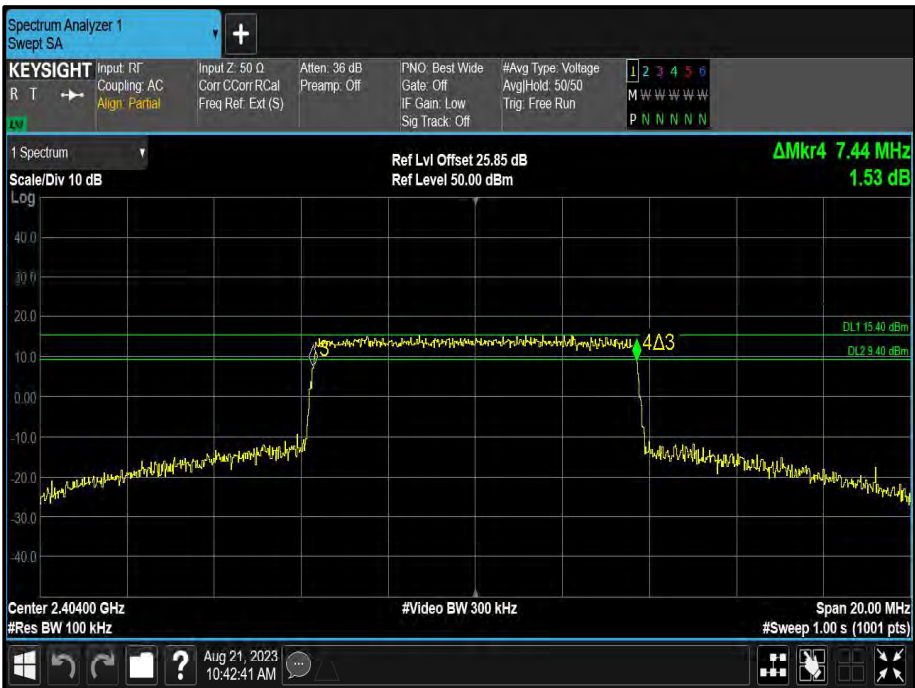


Figure 28 - 8.00 MHz Maximum 6 dB EBW



Figure 29 - 10.00 MHz Minimum 6 dB EBW

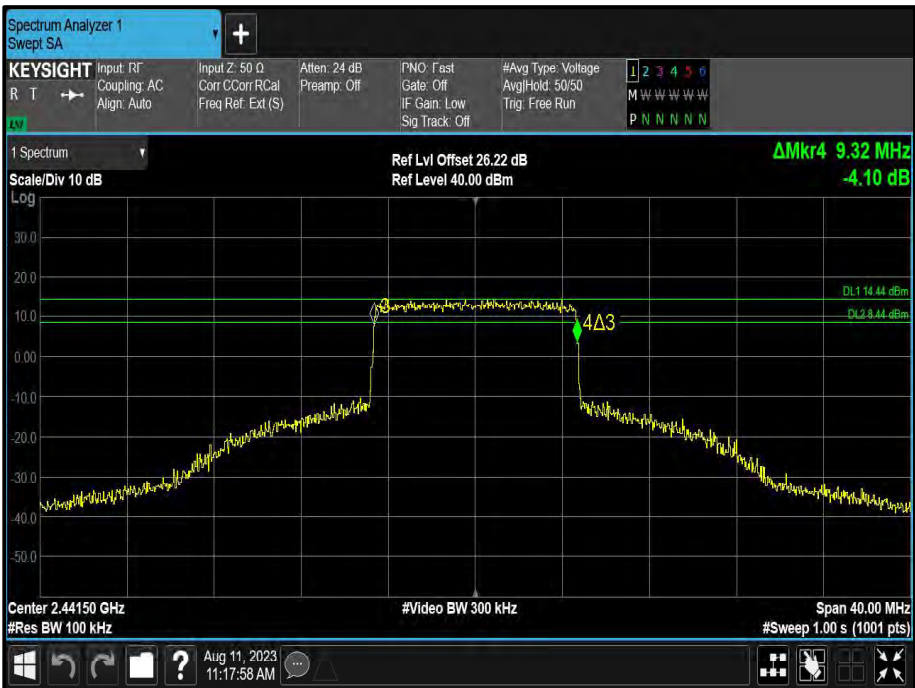


Figure 30 - 10.00 MHz Maximum 6 dB EBW

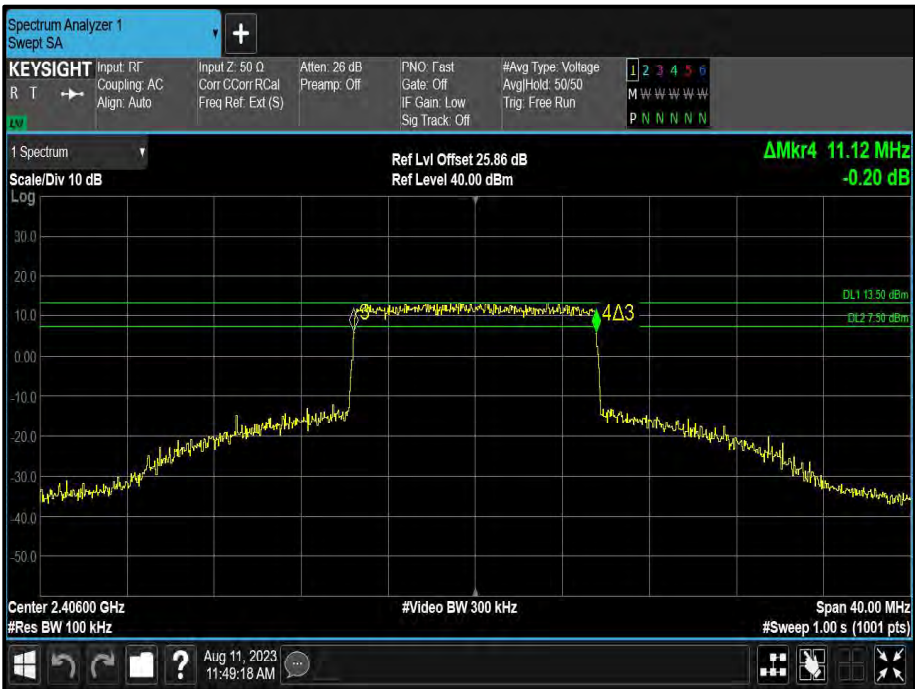


Figure 31 - 12.00 MHz Minimum 6 dB EBW

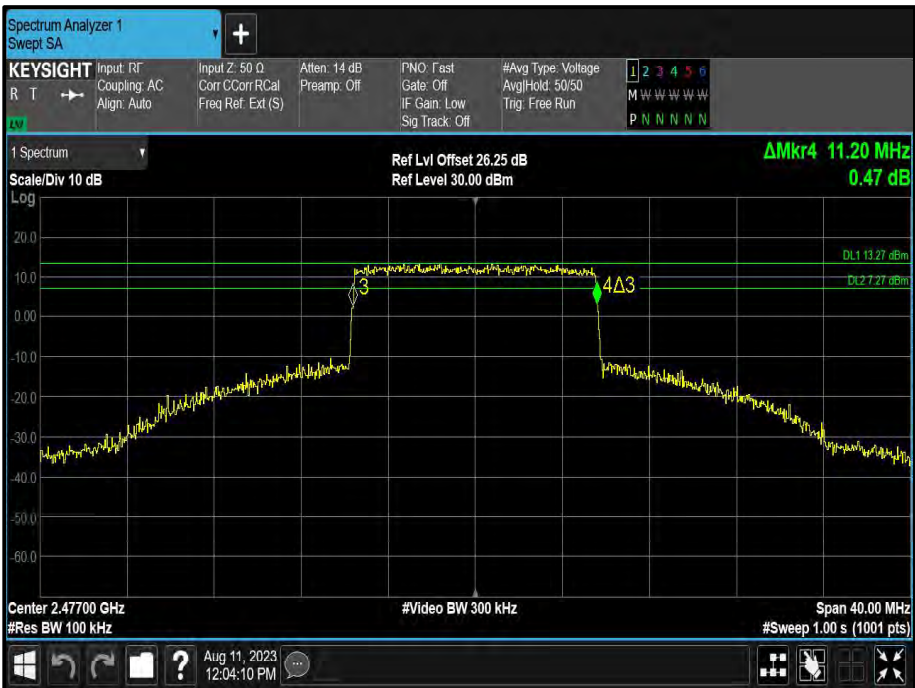


Figure 32 - 12.00 MHz Maximum 6 dB EBW

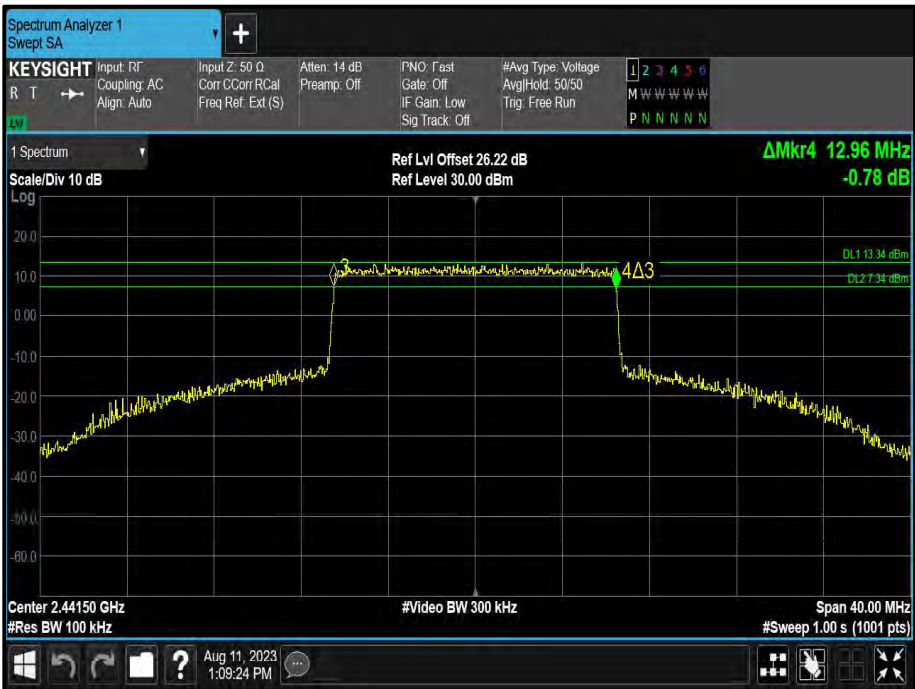


Figure 33 - 14.00 MHz Minimum 6 dB EBW

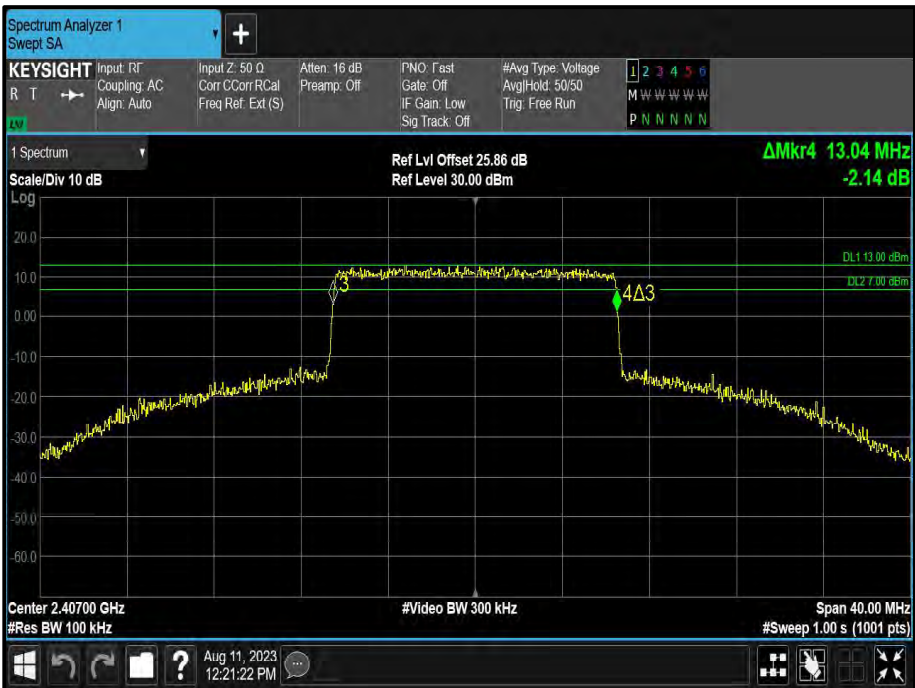


Figure 34 - 14.00 MHz Maximum 6 dB EBW



Figure 35 - 16.00 MHz Minimum 6 dB EBW

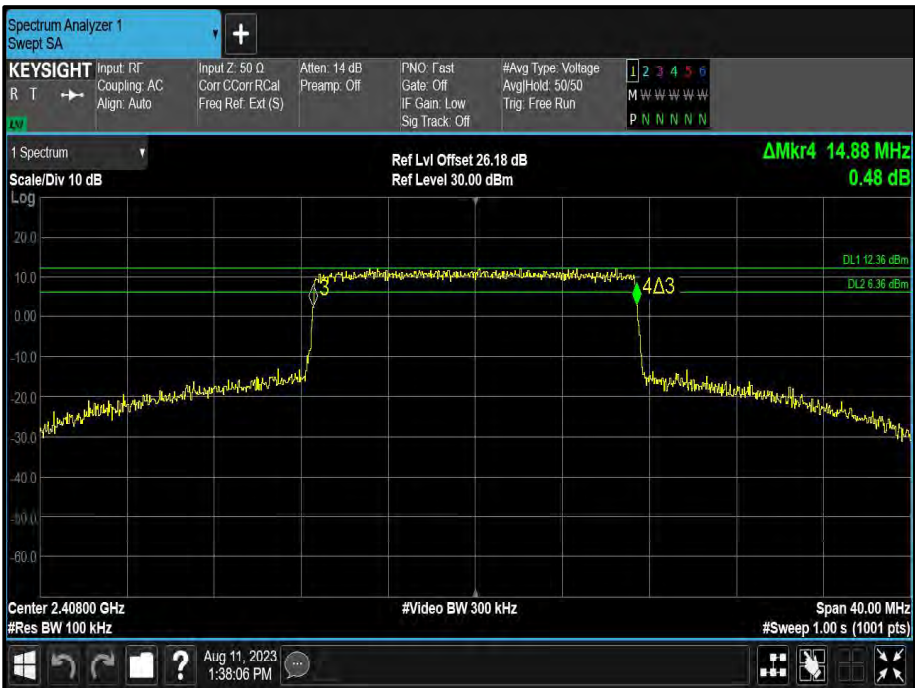


Figure 36 - 16.00 MHz Maximum 6 dB EBW

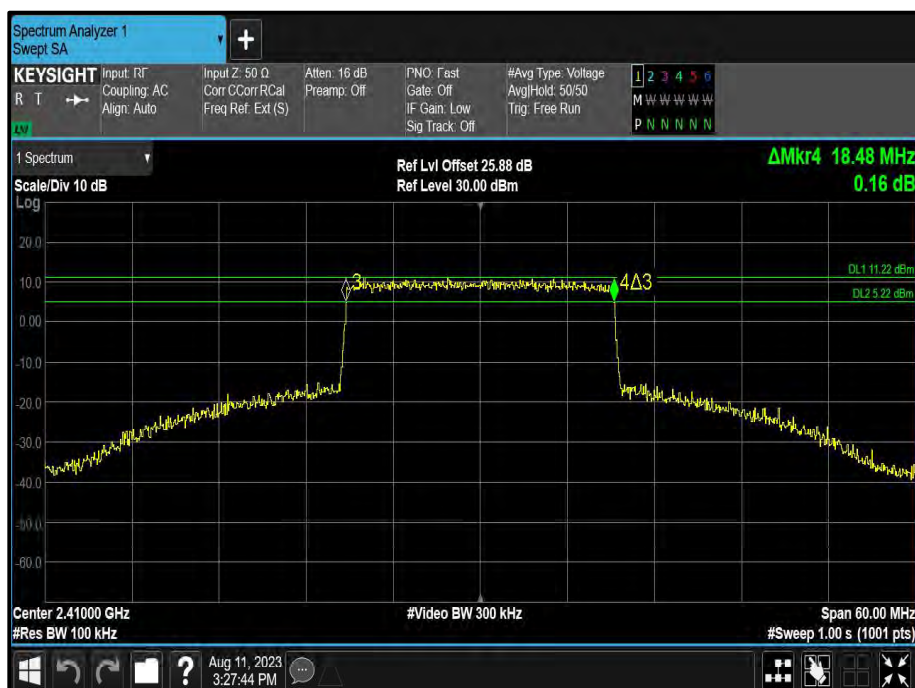


Figure 37 - 20.00 MHz Minimum 6 dB EBW



Figure 38 - 20.00 MHz Maximum 6 dB EBW



Protocol	99% Bandwidth (MHz)	
	Minimum	Maximum
1.25 MHz	1.148	1.152
1.50 MHz	1.372	1.380
1.75 MHz	1.608	1.616
2.50 MHz	2.288	2.304
3.00 MHz	2.752	2.760
3.50 MHz	3.216	3.228
5.00 MHz	4.580	4.600
6.00 MHz	5.520	5.540
7.00 MHz	6.440	6.440
8.00 MHz	7.340	7.360
10.00 MHz	9.200	9.200
12.00 MHz	11.040	11.040
14.00 MHz	12.880	12.880
16.00 MHz	14.720	14.720
20.00 MHz	18.360	18.360

Table 52 - 99% Bandwidth Summary Results - MIMO SDM



Figure 39 - 1.25 MHz Minimum 99% OBW



Figure 40 - 1.25 MHz Maximum 99% OBW



Figure 41 - 1.50 MHz Minimum 99% OBW



Figure 42 - 1.50 MHz Maximum 99% OBW



Figure 43 - 1.75 MHz Minimum 99% OBW



Figure 44 - 1.75 MHz Maximum 99% OBW

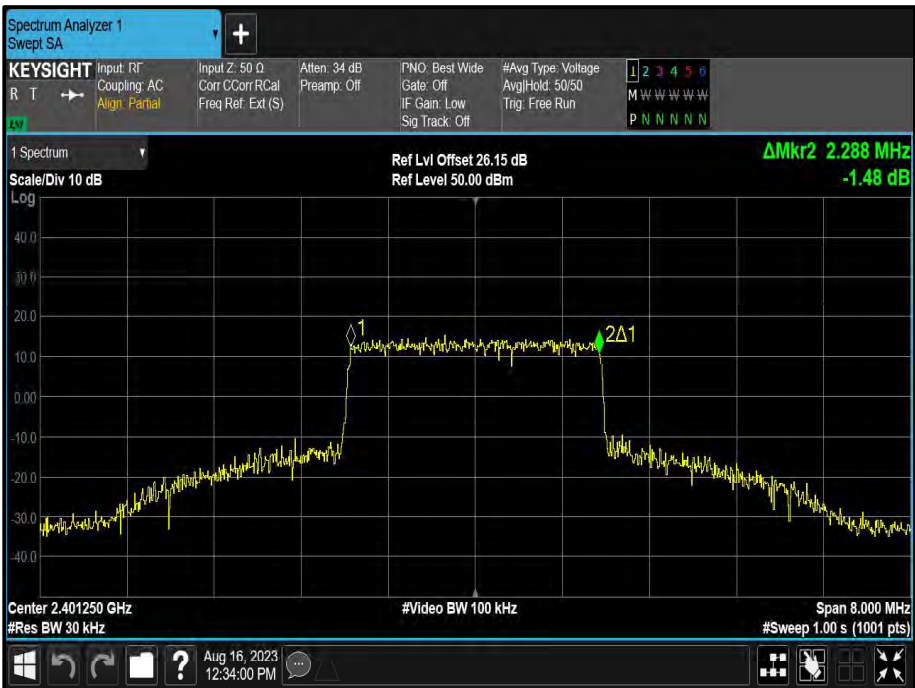


Figure 45 - 2.50 MHz Minimum 99% OBW

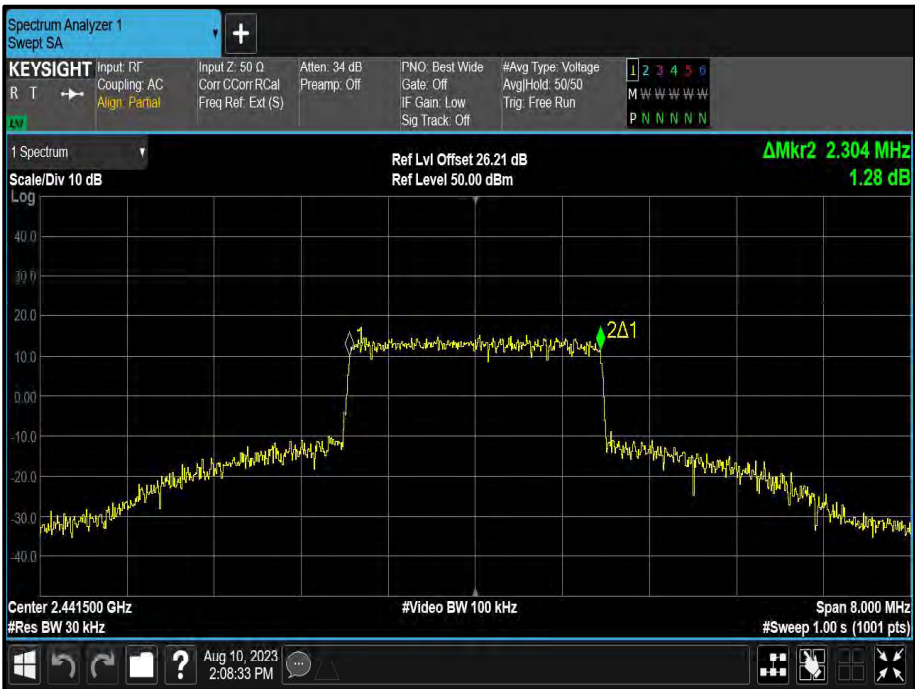


Figure 46 - 2.50 MHz Maximum 99% OBW

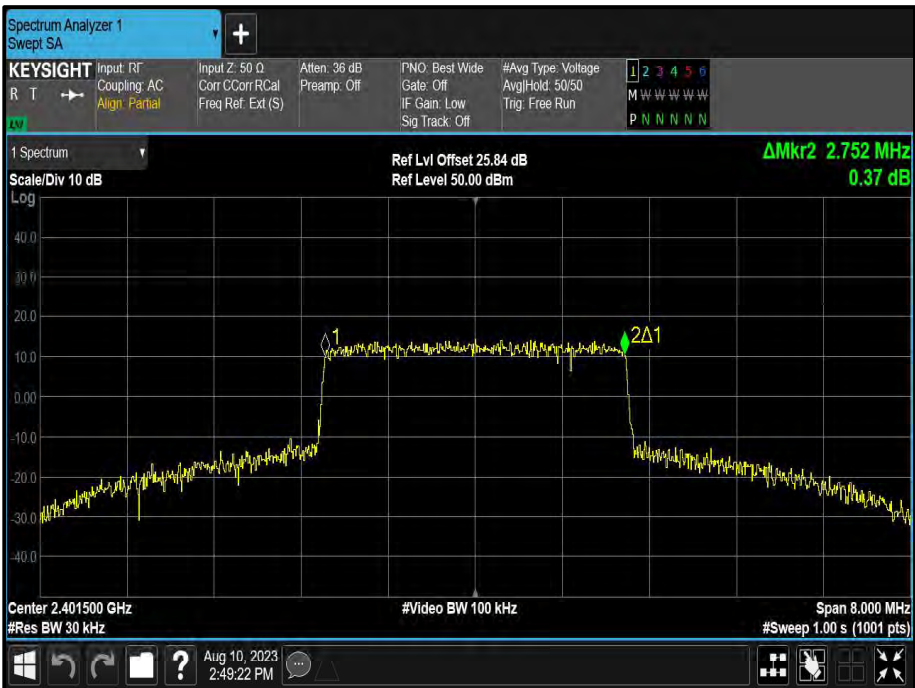


Figure 47 - 3.00 MHz Minimum 99% OBW

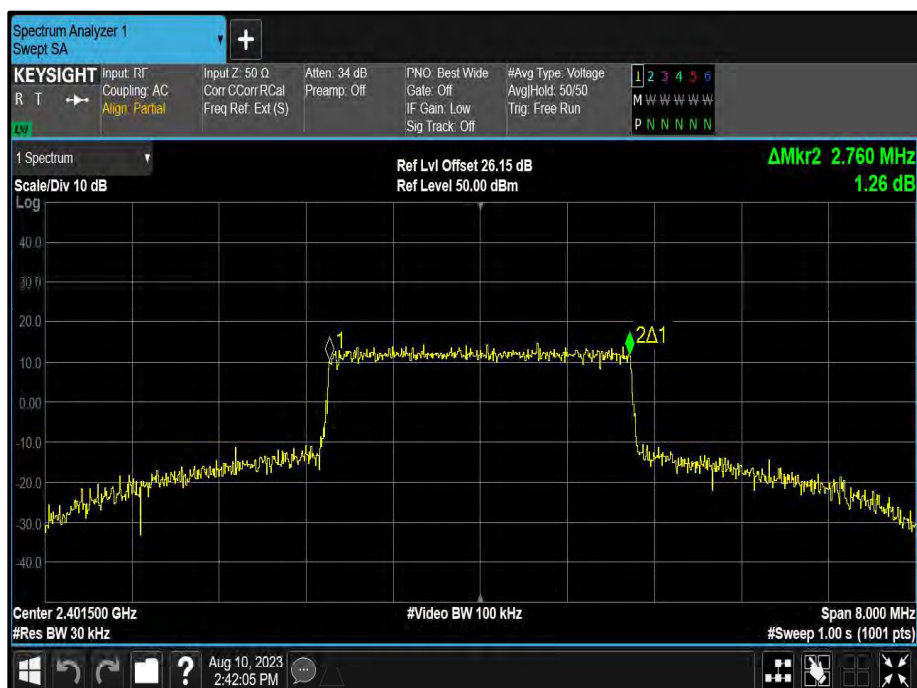


Figure 48 - 3.00 MHz Maximum 99% OBW

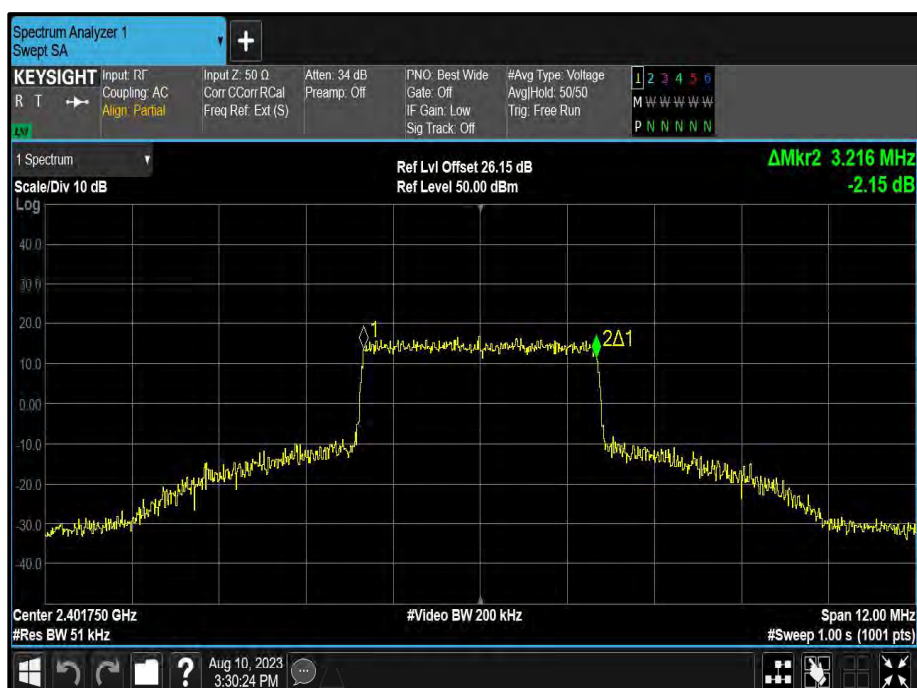


Figure 49 - 3.50 MHz Minimum 99% OBW



Figure 50 - 3.50 MHz Maximum 99% OBW

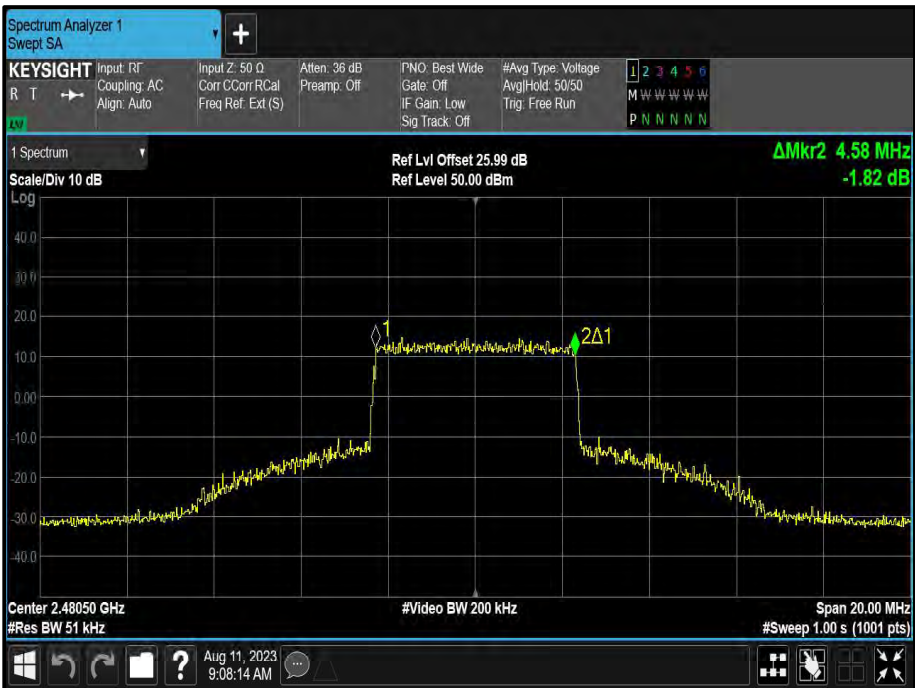


Figure 51 - 5.00 MHz Minimum 99% OBW



Figure 52 - 5.00 MHz Maximum 99% OBW

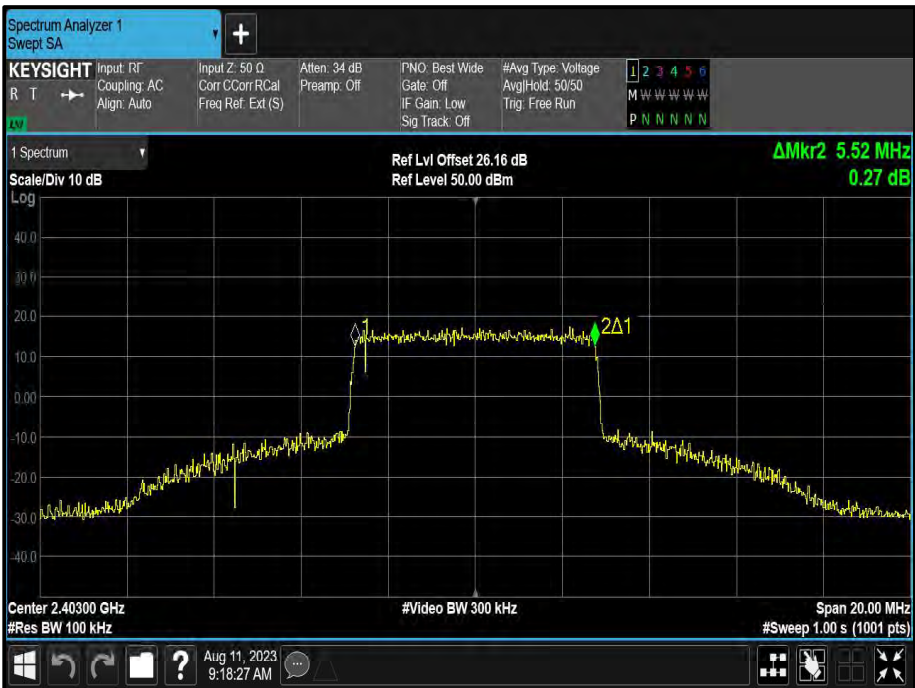


Figure 53 - 6.00 MHz Minimum 99% OBW



Figure 54 - 6.00 MHz Maximum 99% OBW

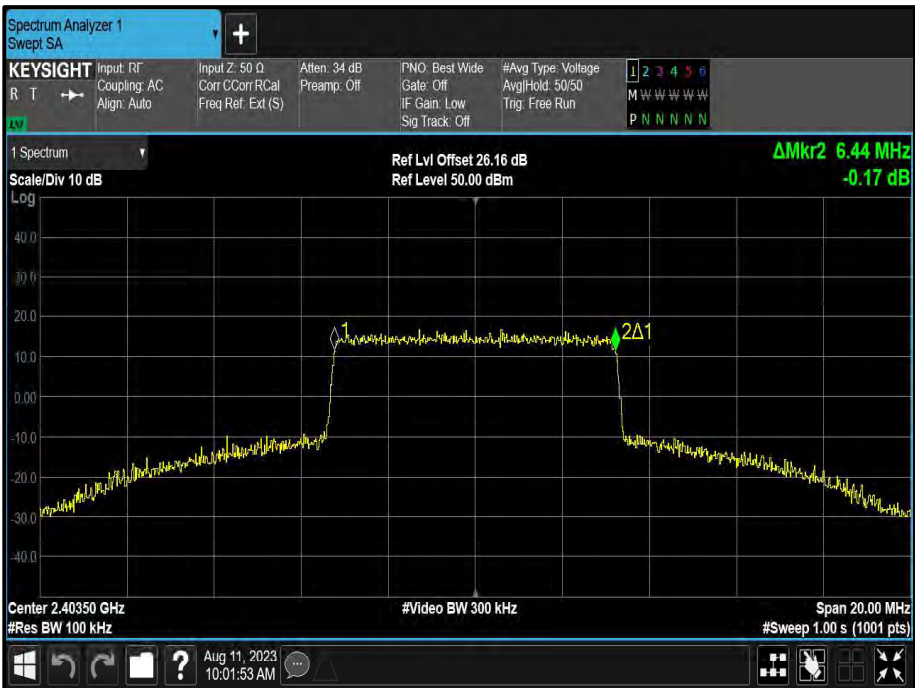


Figure 55 - 7.00 MHz Minimum 99% OBW

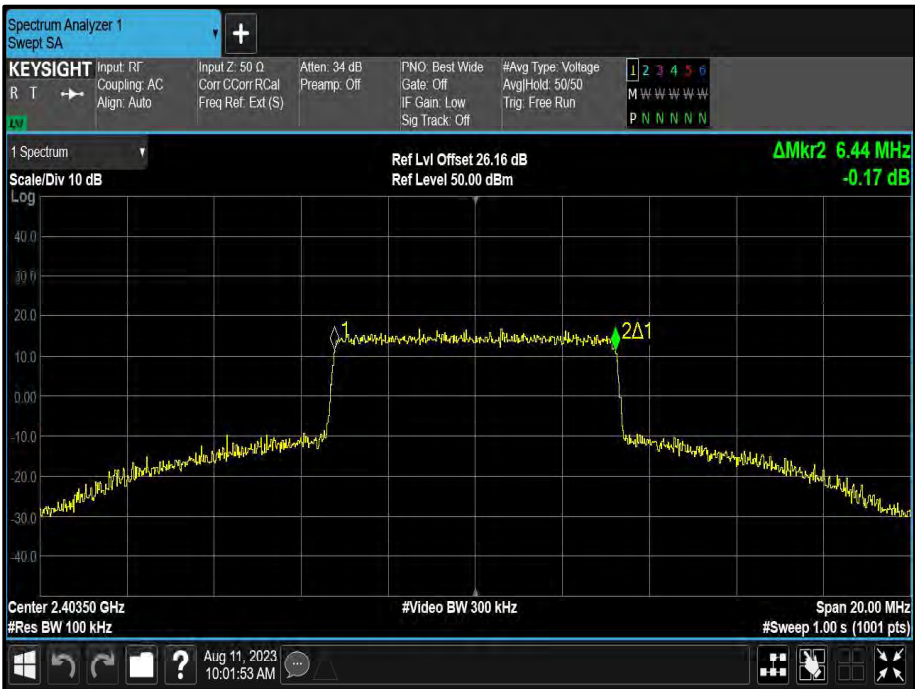


Figure 56 - 7.00 MHz Maximum 99% OBW



Figure 57 - 8.00 MHz Minimum 99% OBW



Figure 58 - 8.00 MHz Maximum 99% OBW

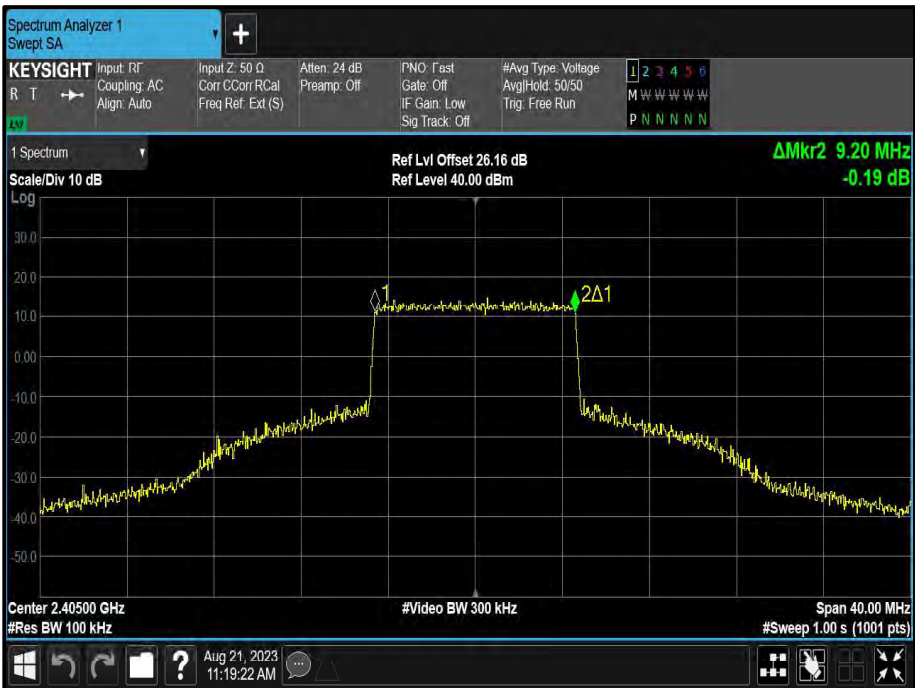


Figure 59 - 10.00 MHz Minimum 99% OBW

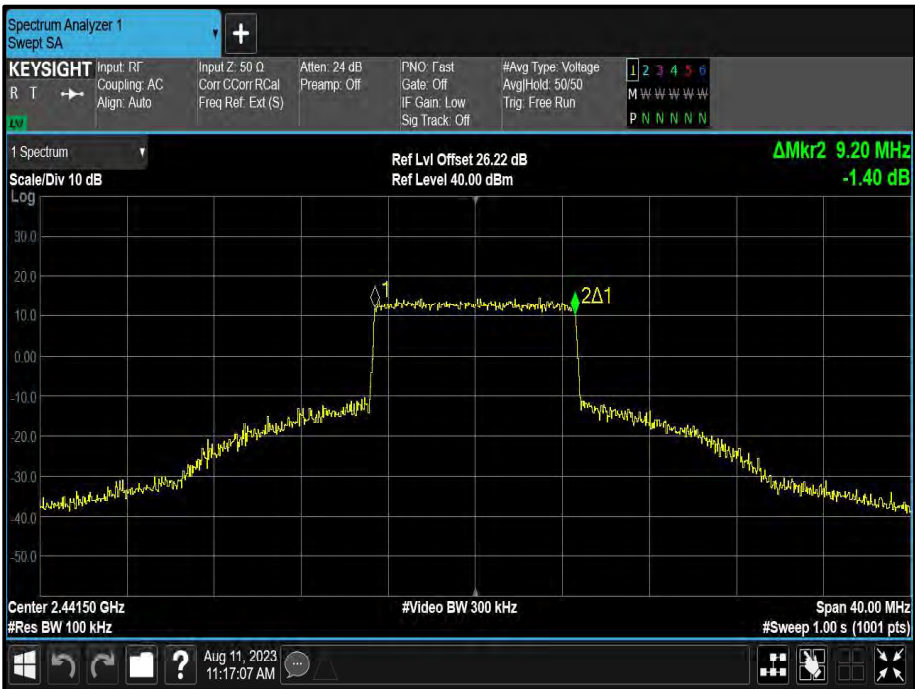


Figure 60 - 10.00 MHz Maximum 99% OBW

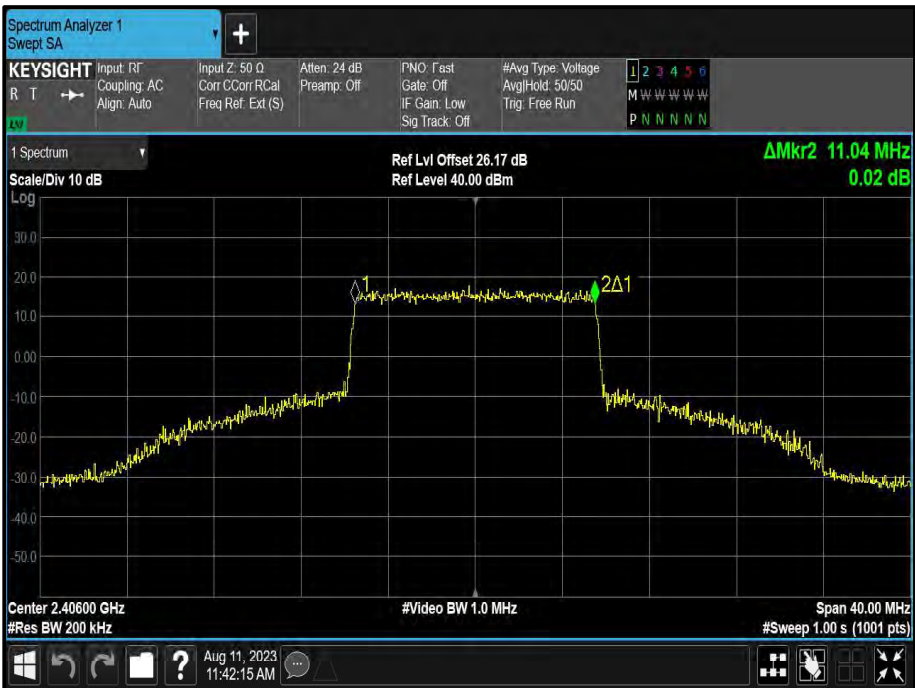


Figure 61 - 12.00 MHz Minimum 99% OBW



Figure 62 - 12.00 MHz Maximum 99% OBW

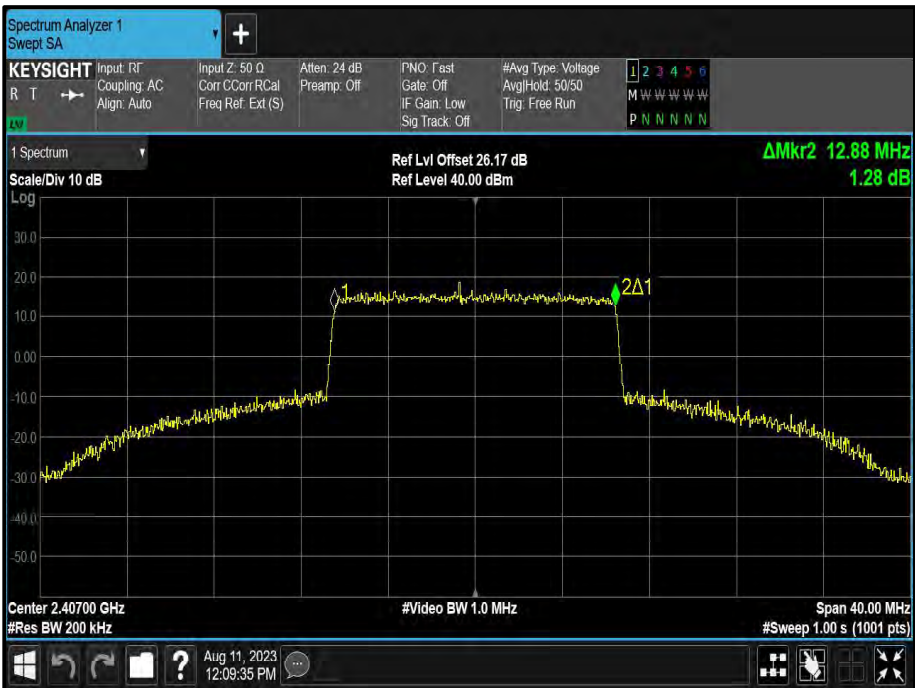


Figure 63 - 14.00 MHz Minimum 99% OBW

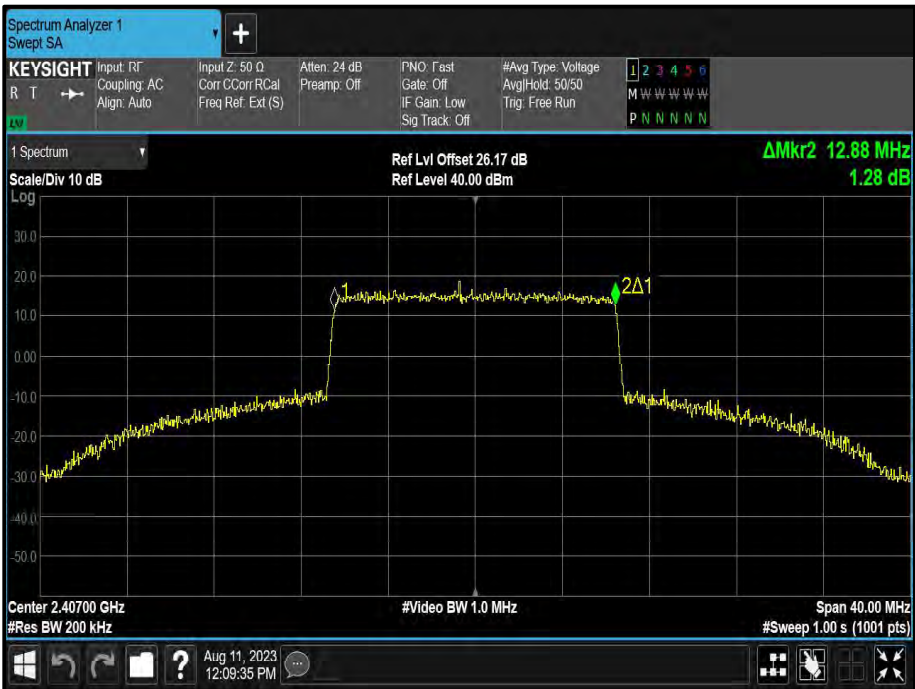


Figure 64 - 14.00 MHz Maximum 99% OBW

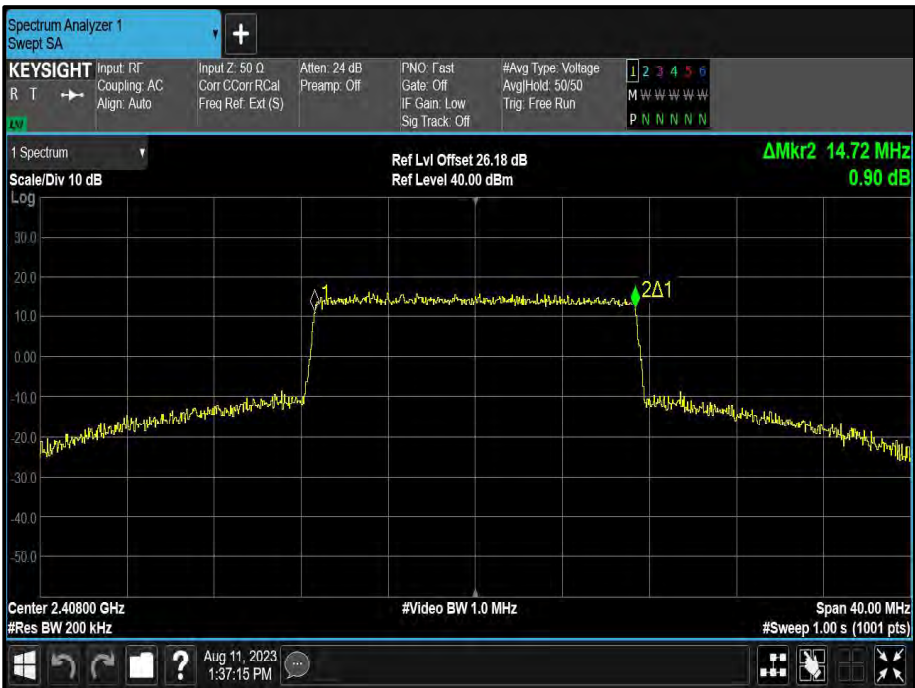


Figure 65 - 16.00 MHz Minimum 99% OBW



Figure 66 - 16.00 MHz Maximum 99% OBW

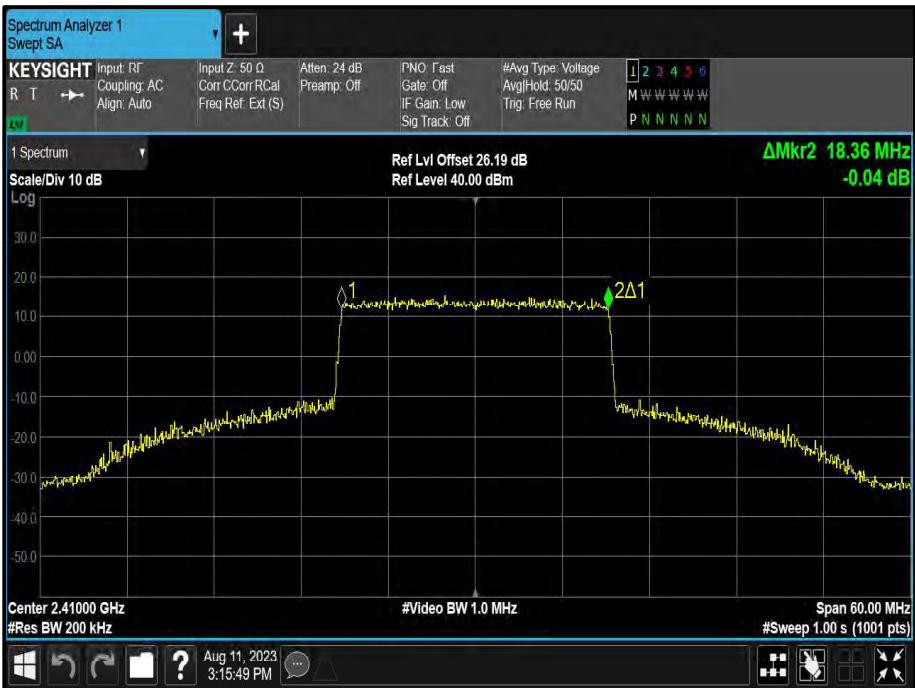


Figure 67 - 20.00 MHz Minimum 99% OBW

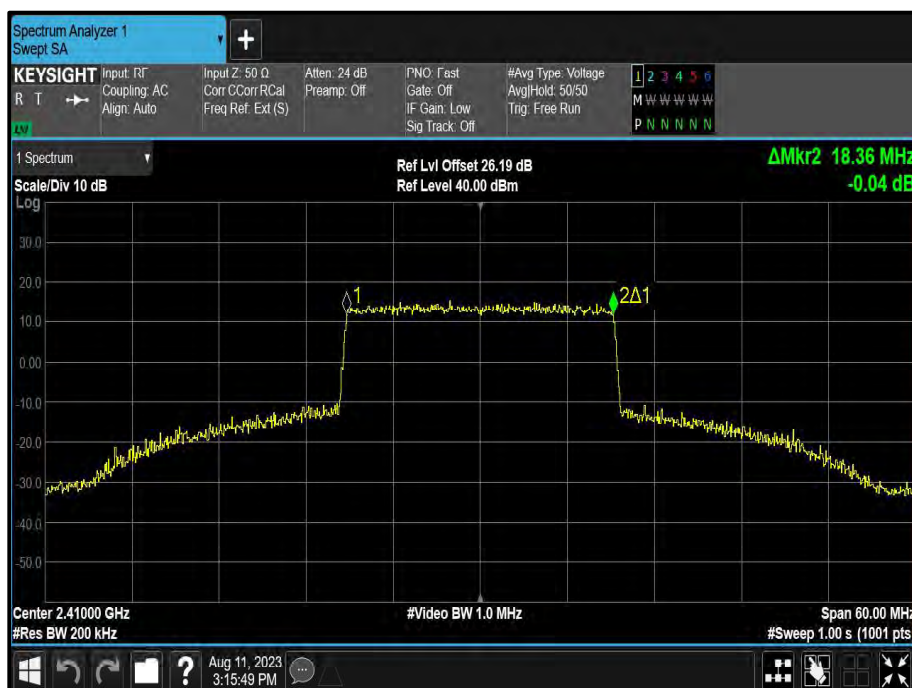


Figure 68 - 20.00 MHz Maximum 99% OBW

FCC 47 CFR Part 15, Limit Clause 15.247(a)(2) and ISSED RSS-247, Clause 5.2(a)

The minimum 6 dB Bandwidth shall be at least 500 kHz.

2.2.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Hygrometer	Rotronic	I-1000	3220	12	15-Nov-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	21-Mar-2024
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6639	12	26-Jul-2024

Table 53



2.3 Maximum Conducted Output Power

2.3.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (b)
ISED RSS-247, Clause 5.4
ISED RSS-GEN, Clause 6.12

2.3.2 Equipment Under Test and Modification State

SA4750, S/N: 062031 Modification State 0

2.3.3 Date of Test

10-August-2023 to 21-August-2023

2.3.4 Test Method

The test was performed in accordance with ANSI C63.10 clause 11.9.2.3.2 Method AVGPM-G.

MIMO output port summing was performed in accordance with KDB 662911 D01 F)2)d)(ii).

2.3.5 Environmental Conditions

Ambient Temperature	22.3 - 22.6 °C
Relative Humidity	59.9 - 64.2 %



2.3.6 Test Results

2.4 GHz COFDM Digital Transceiver

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	1.25 MHz	Duty Cycle (%):	8.9
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2400.625	24.00	23.72	-	-	26.87	30.00	-3.13
2441.500	23.85	23.79	-	-	26.83	30.00	-3.17
2482.375	23.80	23.58	-	-	26.70	30.00	-3.30

Table 54 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2400.625	24.00	23.72	-	-	26.87	30.00	-3.13	28.67	36.00	-7.33
2441.500	23.85	23.79	-	-	26.83	30.00	-3.17	28.63	36.00	-7.37
2482.375	23.80	23.58	-	-	26.70	30.00	-3.30	28.50	36.00	-7.50

Table 55 - ISSED Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	1.50 MHz	Duty Cycle (%):	10.2
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2400.750	23.95	23.70	-	-	26.84	30.00	-3.16
2441.500	23.81	23.76	-	-	26.80	30.00	-3.20
2482.250	23.76	23.57	-	-	26.67	30.00	-3.33

Table 56 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2400.750	23.95	23.70	-	-	26.84	30.00	-3.16	28.64	36.00	-7.36
2441.500	23.81	23.76	-	-	26.80	30.00	-3.20	28.60	36.00	-7.40
2482.250	23.76	23.57	-	-	26.67	30.00	-3.33	28.47	36.00	-7.53

Table 57 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	1.75 MHz	Duty Cycle (%):	10.1
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2400.875	23.97	23.71	-	-	26.85	30.00	-3.15
2441.500	23.82	23.77	-	-	26.80	30.00	-3.20
2482.125	23.76	23.56	-	-	26.67	30.00	-3.33

Table 58 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2400.875	23.97	23.71	-	-	26.85	30.00	-3.15	28.65	36.00	-7.35
2441.500	23.82	23.77	-	-	26.80	30.00	-3.20	28.60	36.00	-7.40
2482.125	23.76	23.56	-	-	26.67	30.00	-3.33	28.47	36.00	-7.53

Table 59 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	2.50 MHz	Duty Cycle (%):	10.2
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2401.250	23.82	23.49	-	-	26.66	30.00	-3.34
2441.500	23.86	23.80	-	-	26.84	30.00	-3.16
2481.750	23.81	23.61	-	-	26.72	30.00	-3.28

Table 60 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2401.250	23.82	23.49	-	-	26.66	30.00	-3.34	28.46	36.00	-7.54
2441.500	23.86	23.80	-	-	26.84	30.00	-3.16	28.64	36.00	-7.36
2481.750	23.81	23.61	-	-	26.72	30.00	-3.28	28.52	36.00	-7.48

Table 61 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	3.00 MHz	Duty Cycle (%):	10.4
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2401.500	23.98	23.72	-	-	26.86	30.00	-3.14
2441.500	23.85	23.79	-	-	26.83	30.00	-3.17
2481.500	23.79	23.59	-	-	26.70	30.00	-3.30

Table 62 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2401.500	23.98	23.72	-	-	26.86	30.00	-3.14	28.66	36.00	-7.34
2441.500	23.85	23.79	-	-	26.83	30.00	-3.17	28.63	36.00	-7.37
2481.500	23.79	23.59	-	-	26.70	30.00	-3.30	28.50	36.00	-7.50

Table 63 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	3.50 MHz	Duty Cycle (%):	10.4
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2401.750	23.98	23.72	-	-	26.86	30.00	-3.14
2441.500	23.84	23.78	-	-	26.82	30.00	-3.18
2481.250	23.80	23.59	-	-	26.70	30.00	-3.30

Table 64 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2401.750	23.98	23.72	-	-	26.86	30.00	-3.14	28.66	36.00	-7.34
2441.500	23.84	23.78	-	-	26.82	30.00	-3.18	28.62	36.00	-7.38
2481.250	23.80	23.59	-	-	26.70	30.00	-3.30	28.50	36.00	-7.50

Table 65 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	5.00 MHz	Duty Cycle (%):	9.1
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2402.500	23.98	23.71	-	-	26.86	30.00	-3.14
2441.500	23.53	23.46	-	-	26.50	30.00	-3.50
2480.500	23.71	23.49	-	-	26.61	30.00	-3.39

Table 66 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2402.500	23.98	23.71	-	-	26.86	30.00	-3.14	28.66	36.00	-7.34
2441.500	23.53	23.46	-	-	26.50	30.00	-3.50	28.30	36.00	-7.70
2480.500	23.71	23.49	-	-	26.61	30.00	-3.39	28.41	36.00	-7.59

Table 67 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	6.00 MHz	Duty Cycle (%):	8.7
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2403.000	23.80	23.49	-	-	26.66	30.00	-3.34
2441.500	23.65	23.51	-	-	26.59	30.00	-3.41
2480.000	23.64	23.33	-	-	26.50	30.00	-3.50

Table 68 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2403.000	23.80	23.49	-	-	26.66	30.00	-3.34	28.46	36.00	-7.54
2441.500	23.65	23.51	-	-	26.59	30.00	-3.41	28.39	36.00	-7.61
2480.000	23.64	23.33	-	-	26.50	30.00	-3.50	28.30	36.00	-7.70

Table 69 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	7.00 MHz	Duty Cycle (%):	8.0
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2403.500	23.91	23.55	-	-	26.74	30.00	-3.26
2441.500	23.77	23.58	-	-	26.69	30.00	-3.31
2479.500	23.74	23.37	-	-	26.57	30.00	-3.43

Table 70 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2403.500	23.91	23.55	-	-	26.74	30.00	-3.26	28.54	36.00	-7.46
2441.500	23.77	23.58	-	-	26.69	30.00	-3.31	28.49	36.00	-7.51
2479.500	23.74	23.37	-	-	26.57	30.00	-3.43	28.37	36.00	-7.63

Table 71 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	8.00 MHz	Duty Cycle (%):	100.0
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2404.000	23.69	23.37	-	-	26.54	30.00	-3.46
2441.500	23.60	23.44	-	-	26.53	30.00	-3.47
2479.000	23.57	23.25	-	-	26.42	30.00	-3.58

Table 72 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2404.000	13.88	13.88	-	-	16.89	30.00	-13.11	18.69	36.00	-17.31
2441.500	13.40	13.52	-	-	16.47	30.00	-13.53	18.27	36.00	-17.73
2479.000	12.94	13.48	-	-	16.23	30.00	-13.77	18.03	36.00	-17.97

Table 73 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	10.00 MHz	Duty Cycle (%):	9.9
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2405.000	23.70	23.38	-	-	26.55	30.00	-3.45
2441.500	23.75	23.55	-	-	26.66	30.00	-3.34
2478.000	23.74	23.37	-	-	26.57	30.00	-3.43

Table 74 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2405.000	10.55	13.66	-	-	15.39	30.00	-14.61	17.19	36.00	-18.81
2441.500	23.75	23.55	-	-	26.66	30.00	-3.34	28.46	36.00	-7.54
2478.000	23.74	23.37	-	-	26.57	30.00	-3.43	28.37	36.00	-7.63

Table 75 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	12.00 MHz	Duty Cycle (%):	7.6
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2406.000	23.84	23.47	-	-	26.67	30.00	-3.33
2441.500	23.81	23.63	-	-	26.73	30.00	-3.27
2477.000	23.86	23.50	-	-	26.69	30.00	-3.31

Table 76 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2406.000	23.84	23.47	-	-	26.67	30.00	-3.33	28.47	36.00	-7.53
2441.500	23.81	23.63	-	-	26.73	30.00	-3.27	28.53	36.00	-7.47
2477.000	23.86	23.50	-	-	26.69	30.00	-3.31	28.49	36.00	-7.51

Table 77 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	14.00 MHz	Duty Cycle (%):	10.0
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2407.000	23.90	23.55	-	-	26.74	30.00	-3.26
2441.500	23.86	23.67	-	-	26.77	30.00	-3.23
2476.000	23.87	23.50	-	-	26.70	30.00	-3.30

Table 78 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2407.000	23.90	23.55	-	-	26.74	30.00	-3.26	28.54	36.00	-7.46
2441.500	23.86	23.67	-	-	26.77	30.00	-3.23	28.57	36.00	-7.43
2476.000	23.87	23.50	-	-	26.70	30.00	-3.30	28.50	36.00	-7.50

Table 79 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	16.00 MHz	Duty Cycle (%):	4.5
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2408.000	23.91	23.56	-	-	26.75	30.00	-3.25
2441.500	23.83	23.64	-	-	26.75	30.00	-3.25
2475.000	23.66	23.29	-	-	26.49	30.00	-3.51

Table 80 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2408.000	23.91	23.56	-	-	26.75	30.00	-3.25	28.55	36.00	-7.45
2441.500	23.83	23.64	-	-	26.75	30.00	-3.25	28.55	36.00	-7.45
2475.000	23.66	23.29	-	-	26.49	30.00	-3.51	28.29	36.00	-7.71

Table 81 - ISD Maximum Conducted (average) Output Power Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (b)(3) RSS-247 5.4 d)	Test Method(s):	C63.10 11.9.2.3.2
Additional Reference(s):	662911 D01 v02r01 F)2)d)(ii), 662911 D01 v02r01 E)1)		

DUT Configuration			
Mode:	20.00 MHz	Duty Cycle (%):	6.0
-	-	DCCF (dB):	-
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	1.80
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)
	A	B	C	D	Σ		
2410.000	23.84	23.49	-	-	26.68	30.00	-3.32
2441.500	23.77	23.57	-	-	26.68	30.00	-3.32
2473.000	23.83	23.44	-	-	26.65	30.00	-3.35

Table 82 - FCC Maximum Conducted (average) Output Power Results

Test Frequency (MHz)	Maximum Conducted Output Power (dBm)					Limit (dBm)	Margin (dB)	EIRP (dBm)	EIRP Limit (dBm)	EIRP Margin (dB)
	A	B	C	D	Σ					
2410.000	23.84	23.49	-	-	26.68	30.00	-3.32	28.48	36.00	-7.52
2441.500	23.77	23.57	-	-	26.68	30.00	-3.32	28.48	36.00	-7.52
2473.000	23.83	23.44	-	-	26.65	30.00	-3.35	28.45	36.00	-7.55

Table 83 - ISD Maximum Conducted (average) Output Power Results



2.3.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Hygrometer	Rotronic	I-1000	3220	12	15-Nov-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
USB Power Sensor	Boonton	RTP5008	5833	12	12-Jul-2024
USB Power Sensor	Boonton	RTP5008	5834	12	12-Jul-2024
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6639	12	26-Jul-2024

Table 84



2.4 Authorised Band Edges

2.4.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (d),
ISED RSS-247, Clause 5.5

2.4.2 Equipment Under Test and Modification State

SA4750, S/N: 062023 - Modification State 0

2.4.3 Date of Test

22-August-2023 to 24-August-2023

2.4.4 Test Method

The test was performed in accordance with ANSI C63.10, clause 6.10.4.

The test was performed in a conducted method using a power splitter, 20 dB attenuator and required SMA cables. The EUT was connected (as a Link) to another EUT via the power splitter to allow duplex connectivity.

This test was performed on the lowest and highest frequency for the narrowest (1.25 MHz) and widest (20 MHz) channel bandwidths only.

2.4.5 Environmental Conditions

Ambient Temperature	21.2 - 23.6 °C
Relative Humidity	54.6 - 64.2 %

2.4.6 Test Results

2.4 GHz COFDM Digital Transceiver

Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Peak (dBm)	Level (dBc)
Bottom	2402.500	1.25	2400	21.35	-48.08
Top	2478.500	1.25	2483.5	22.29	-66.52

Table 85 - Port A_Channel_MIMO_SDM_X Plane, Authorised Band Edge

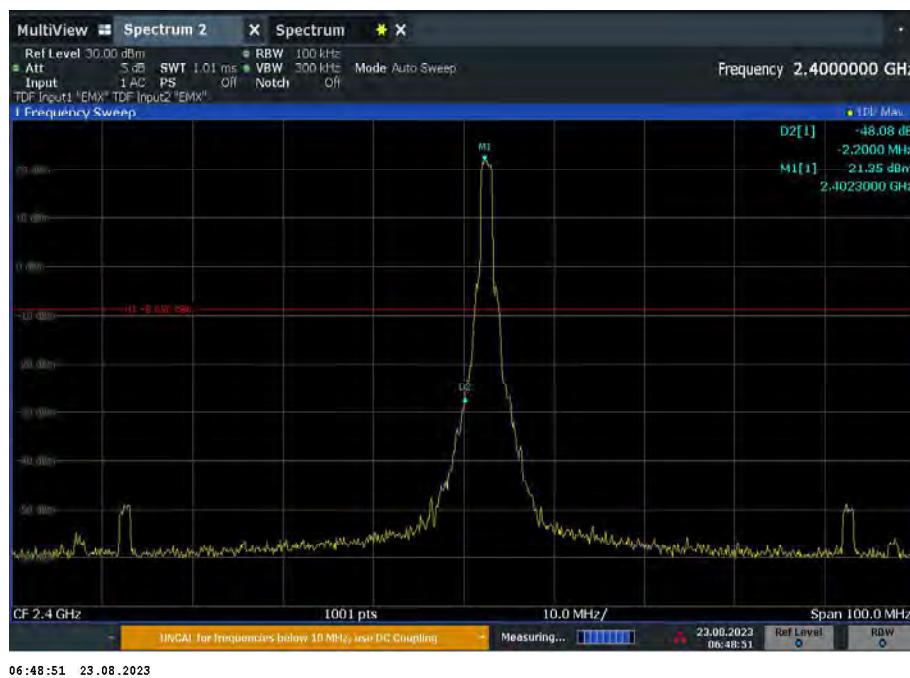


Figure 69 - Port A_Bot_Channel_MIMO_SDM_1.25MHz_X Plane, 2402.50 MHz, Band Edge Frequency 2400 MHz

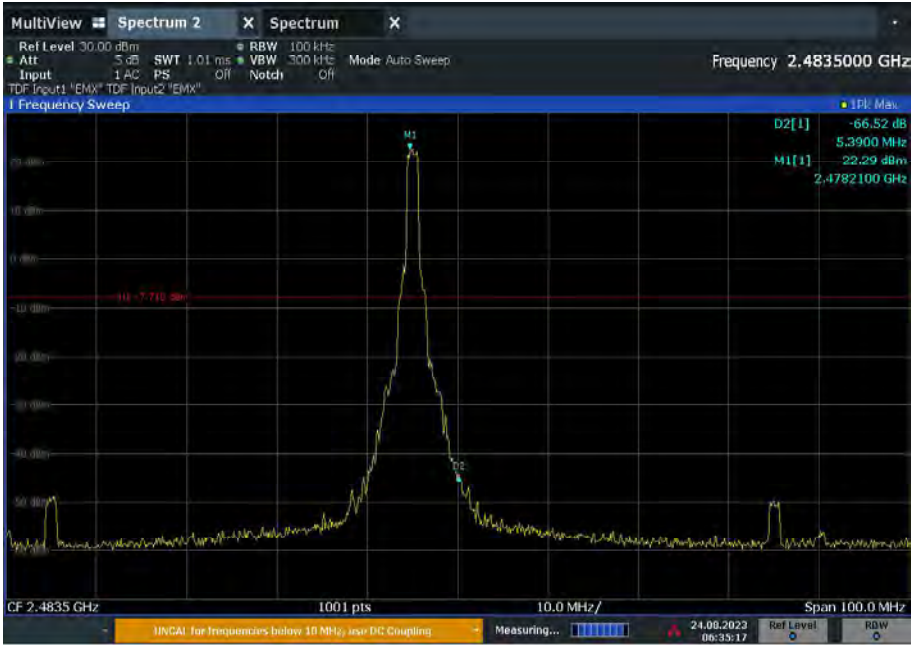


Figure 70 - Port A_Top_Channel_MIMO_SDM_1.25MHz_X Plane, 2478.50 MHz, Band Edge
Frequency 2483.5 MHz



Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Peak (dBm)	Level (dBc)
Bottom	2435.000	20	2400	10.83	-49.79
Top	2438.500	20	2483.5	11.48	-55.88

Table 86 - Port A_Channel_MIMO_SDM_X Plane, Authorised Band Edge



Figure 71 - Port A_Bot_Channel_MIMO_SDM_20MHz_X Plane, 2435 MHz, Band Edge Frequency 2400 MHz



Frequency 2483.5 MHz



Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Peak (dBm)	Level (dBc)
Bottom	2402.500	1.25	2400	22.58	-49.12
Top	2479.125	1.25	2483.5	23.68	-66.41

Table 87 - Port B_Channel_MIMO_SDM_X Plane, Authorised Band Edge

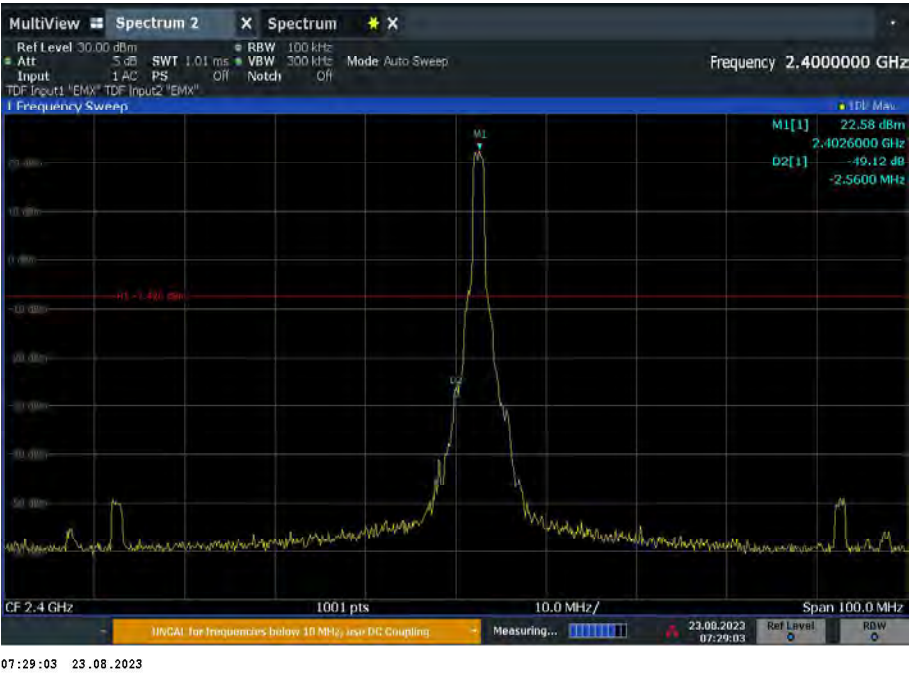


Figure 73 - Port B_Bot_Channel_MIMO_SDM_1.25MHz_X Plane, 2402.5 MHz, Band Edge Frequency 2400 MHz

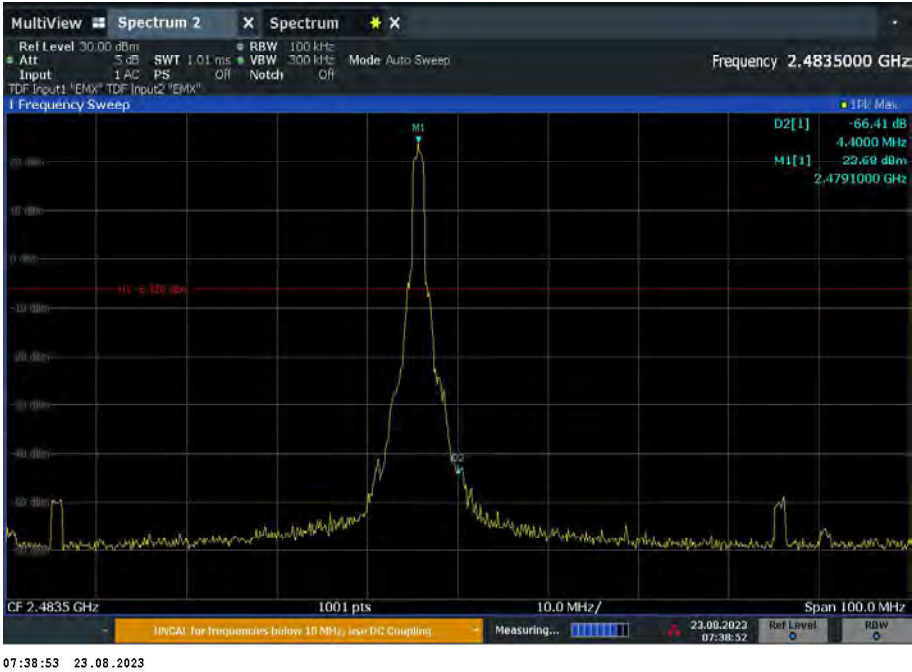


Figure 74 - Port B_Top_Channel_MIMO_SDM_1.25MHz_X Plane, 2479.125 MHz, Band Edge
Frequency 2483.5 MHz

Channel	Frequency (MHz)	Bandwidth (MHz)	Band Edge Frequency (MHz)	Peak (dBm)	Level (dBc)
Bottom	2435.000	20	2400	10.55	-50.48
Top	2438.500	20	2483.5	10.95	-56.46

Table 88 - Port B_Channel_MIMO_SDM_X, Authorised Band Edge



Figure 75 - Port B_Bot_Channel_MIMO_SDM_20MHz_X Plane, 2435 MHz, Band Edge Frequency 2400 MHz



**Figure 76 - Port B_Top_Channel_MIMO_SDM_20MHz_X Plane, 2438.5 MHz, Band Edge
Frequency 2483.5 MHz**

2.4.7 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Power Splitter, 2 way	Mini-Circuits	ZN2PD2-63-S+	5238	-	O/P Mon
Test Receiver	Rohde & Schwarz	ESW44	5379	12	01-Oct-2023
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5497	12	18-Apr-2024
Attenuator 5W 20dB DC-18GHz	Aaren	AT40A-4041-D18-20	5500	12	21-May-2024
Cable (K-Type to K-Type, 1 m)	Junkosha	MWX241-01000KMSKMS/A	5512	12	21-May-2024
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5518	12	14-Apr-2024
Coaxial Fixed Attenuator DC-18GHz 5W 10dB	RF-Lambda	RFS5G18B10SMP	6175	12	19-Jul-2024

Table 89

O/P Mon – Output Monitored using calibrated equipment



2.5 Spurious Radiated Emissions

2.5.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.209 and 15.247 (d)
ISED RSS-247, Clause 3.3 and 5.5
ISED RSS-GEN, Clause 6.13 and 8.9

2.5.2 Equipment Under Test and Modification State

SA4750, S/N: 062031 - Modification State 0

2.5.3 Date of Test

11-August-2023 to 13-August-2023

2.5.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 6.3, 6.5 and 6.6.

For frequencies > 1 GHz, plots for average measurements were taken in accordance with ANSI C63.10, clause 11.12.2.5.2.

The EUT frequency channels were set to 1.25 MHz Bandwidths.

The EUT was placed on the non-conducting platform in a manner typical of a normal installation. As the EUT was considered mobile/portable and therefore reasonable to be used in multiple planes, pre-scans were performed with the EUT orientated in X, Y and Z planes with reference to the ground plane.

The plots shown are the characterisation of the EUT. The limits on the plots represent the most stringent case for restricted bands, (74/54 dBuV/m) when compared to 20 dBc outside restricted bands. The limits shown have been used as a threshold to determine where further measurements are necessary. Where results are within 10 dB of the limits shown on the plots, further investigation was carried out and reported in results tables.

The following conversion can be applied to convert from dBμV/m to μV/m:
 $10^{(\text{Field Strength in dB}\mu\text{V/m}/20)}$

Above 18 GHz, the measurement distance was reduced to 1 m.

At a measurement distance of 1 meter the limit line was increased by $20 \cdot \text{LOG}(3/1) = 9.54$ dB.

Where formal measurements have been necessary, the results have been presented in the emissions table.

2.5.7 Test Results

2.4 GHz COFDM Digital Transceiver

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 90 - Mid_Channel_MIMO_SDM_X Plane, 2442 MHz, 30 MHz to 1 GHz

*No emissions found within 10 dB of the limit.

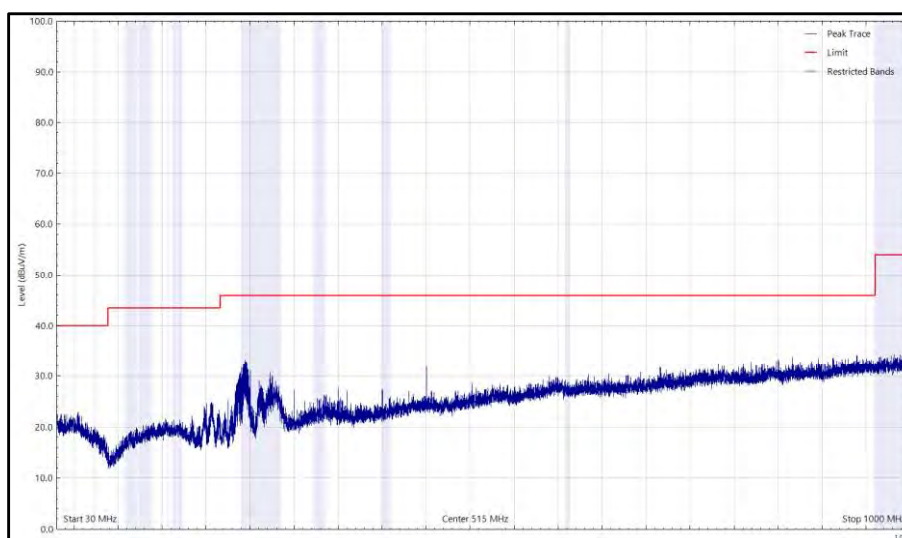


Figure 78 - Mid_Channel_MIMO_SDM_X Plane, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

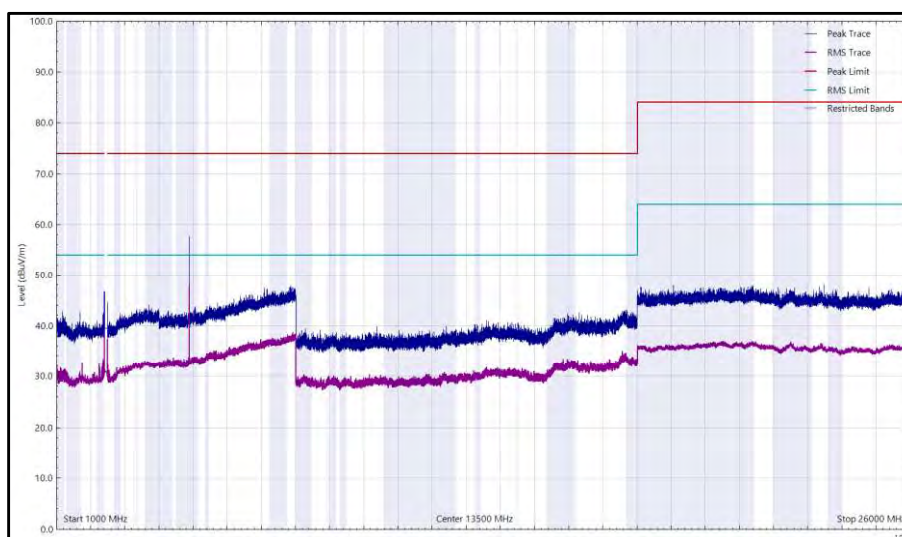


Figure 79 - Mid_Channel_MIMO_SDM_X Plane, 2442 MHz, 1 GHz to 26 GHz, Horizontal

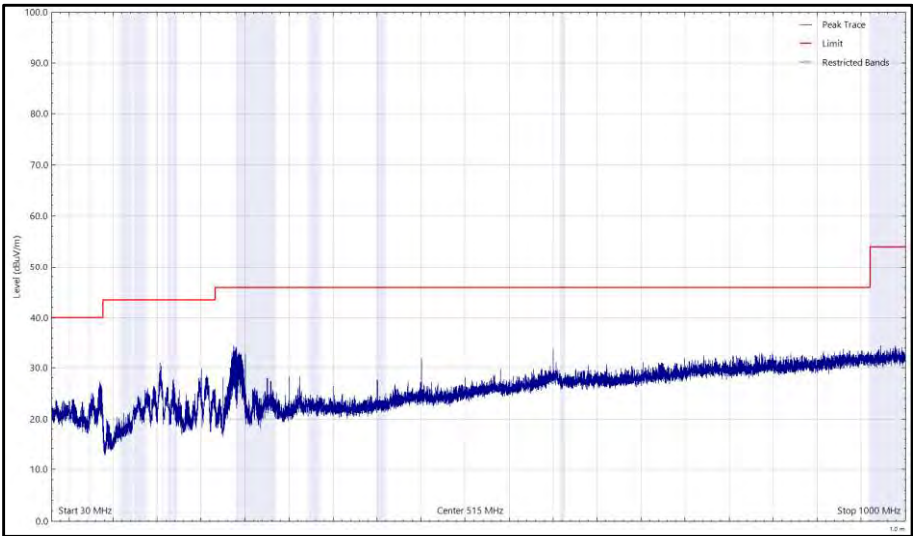


Figure 80 - Mid_Channel_MIMO_SDM_X Plane, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

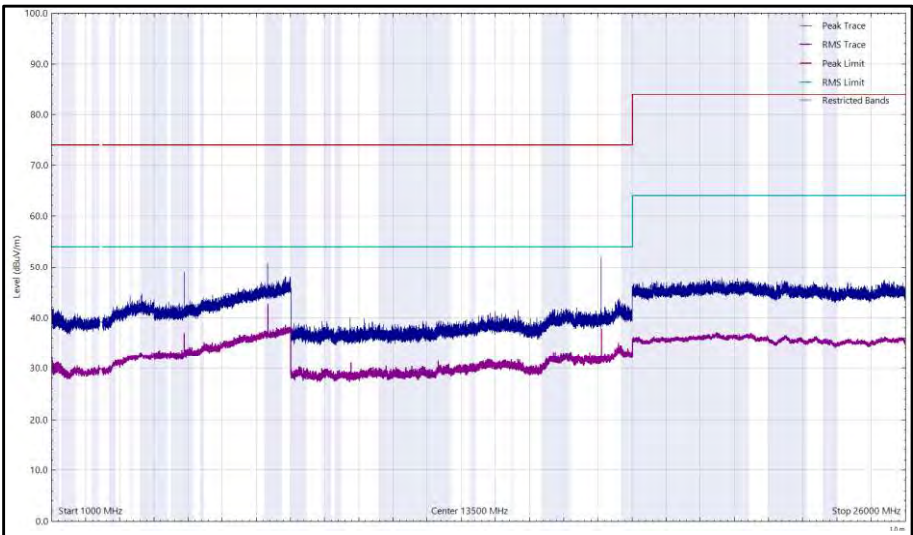


Figure 81 - Mid_Channel_MIMO_SDM_X Plane, 2442 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 91 - Mid_Channel_MIMO_SDM_Y Plane, 2442 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

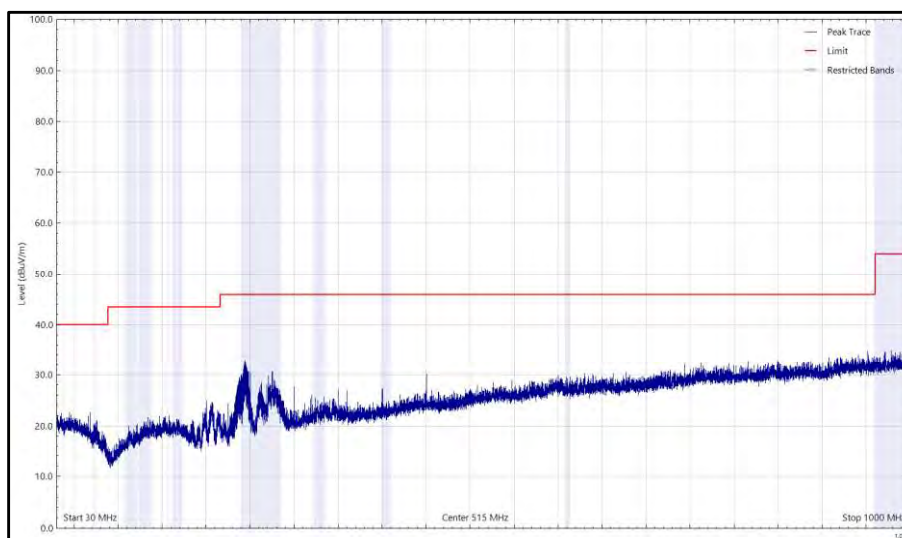


Figure 82 - Mid_Channel_MIMO_SDM_Y Plane, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

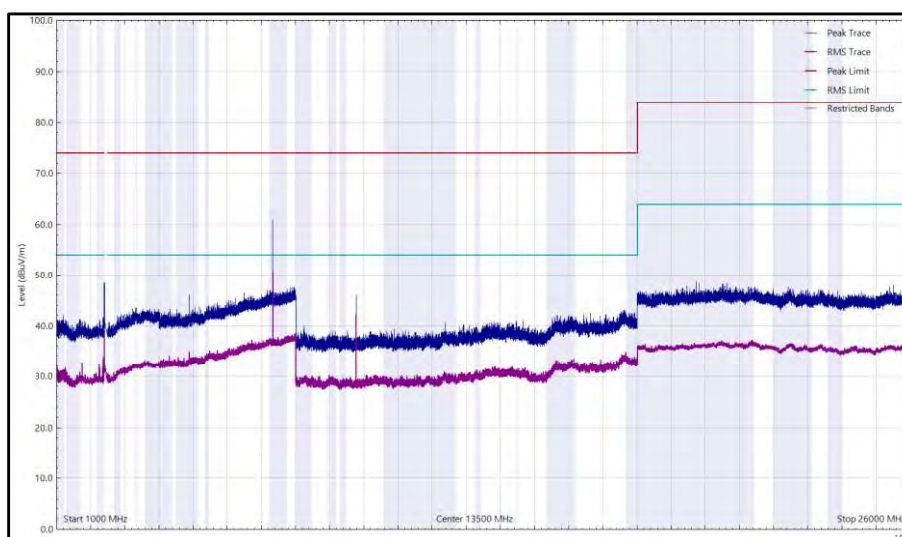


Figure 83 - Mid_Channel_MIMO_SDM_Y Plane, 2442 MHz, 1 GHz to 26 GHz, Horizontal

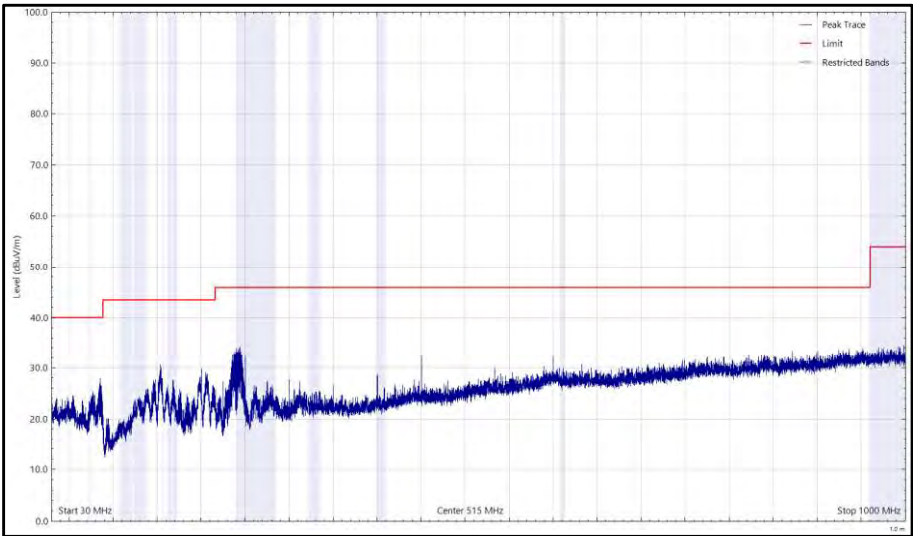


Figure 84 - Mid_Channel_MIMO_SDM_Y Plane, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

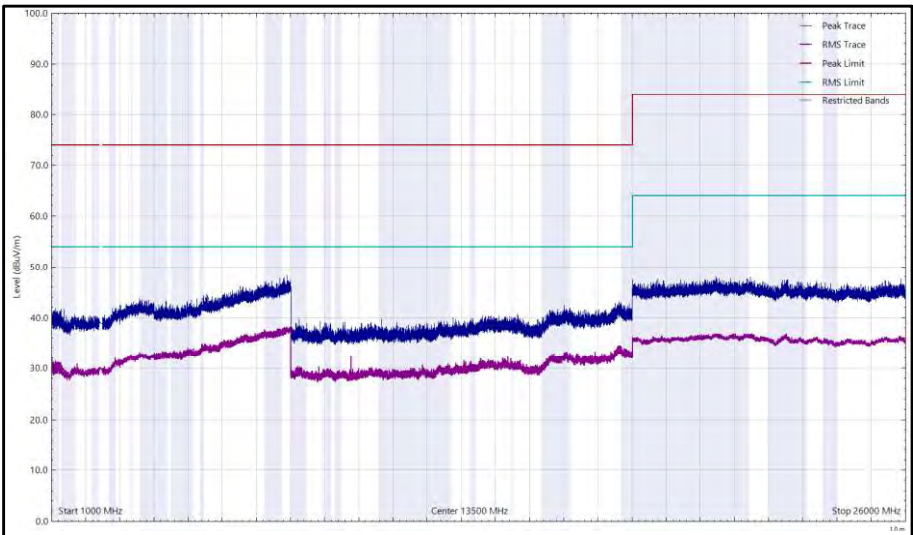


Figure 85 - Mid_Channel_MIMO_SDM_Y Plane, 2442 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 92 - Mid_Channel_MIMO_SDM_Z Plane, 2442 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

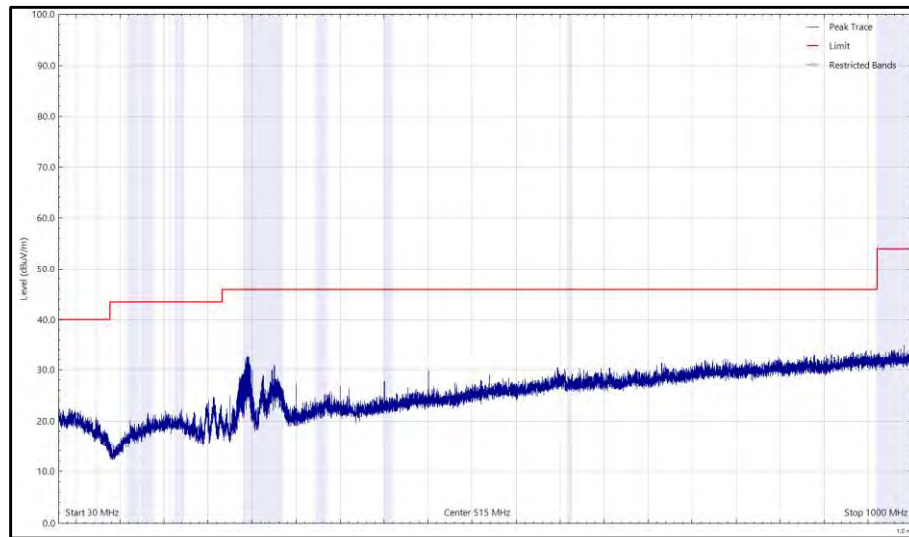


Figure 86 - Mid_Channel_MIMO_SDM_Z Plane, 2442 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

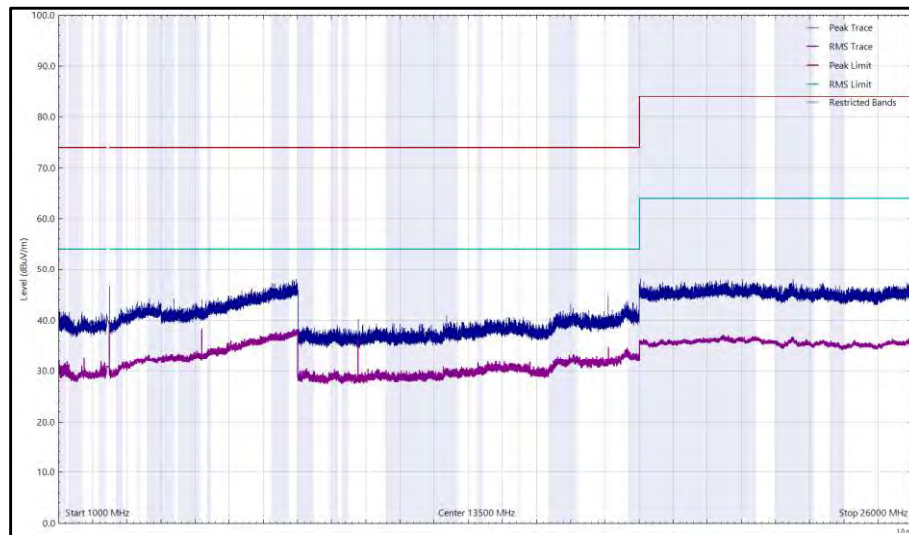


Figure 87 - Mid_Channel_MIMO_SDM_Z Plane, 2442 MHz, 1 GHz to 26 GHz, Horizontal

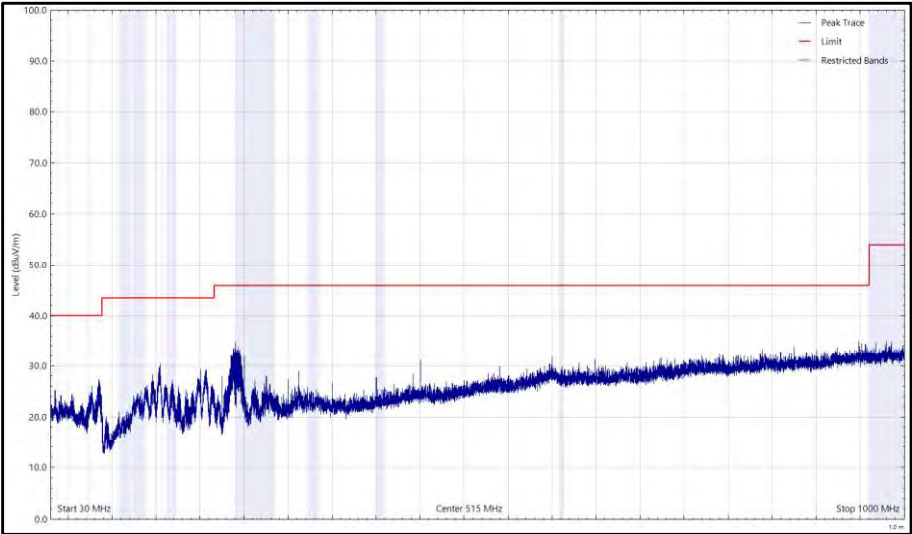


Figure 88 - Mid_Channel_MIMO_SDM_Z Plane, 2442 MHz, 30 MHz to 1 GHz, Vertical (Peak)

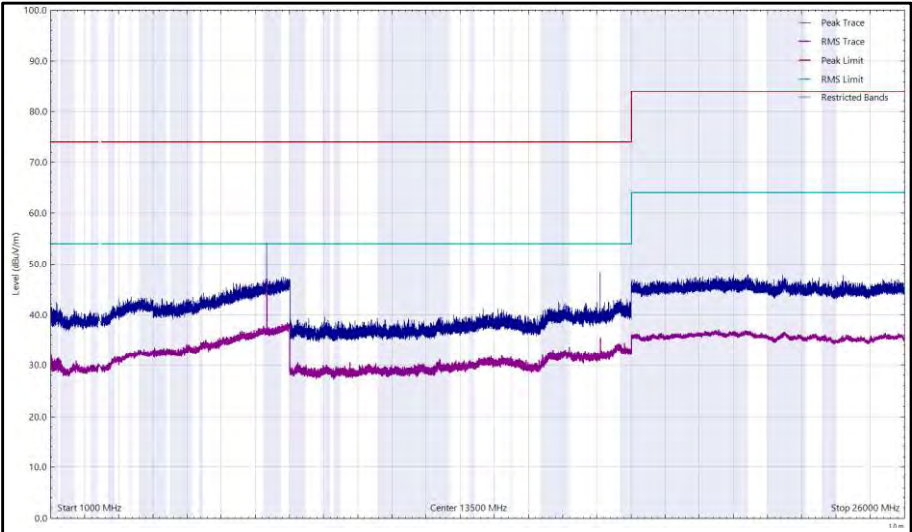


Figure 89 - Mid_Channel_MIMO_SDM_Z Plane, 2442 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 93 - Bot_Channel_MIMO_SDM_X Plane Plane, 2401 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

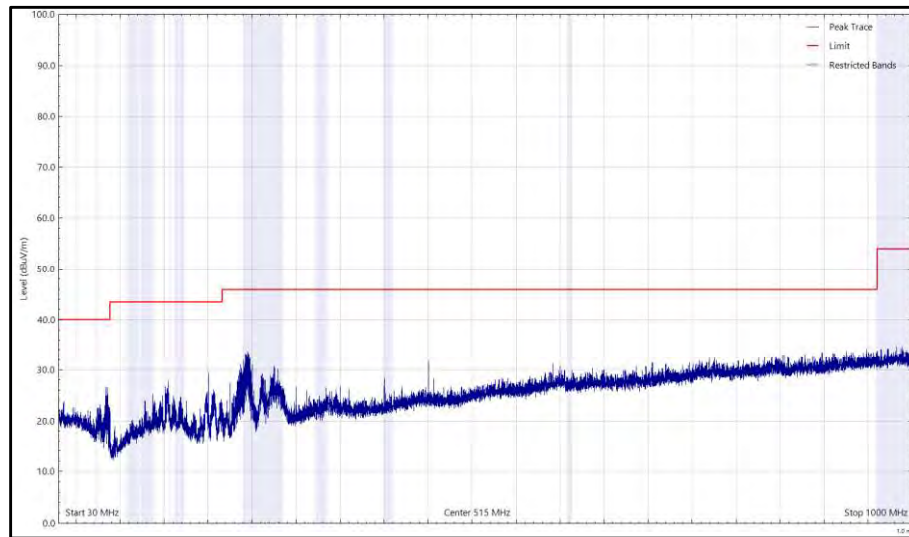


Figure 90 - Bot_Channel_MIMO_SDM_X Plane, 2401 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

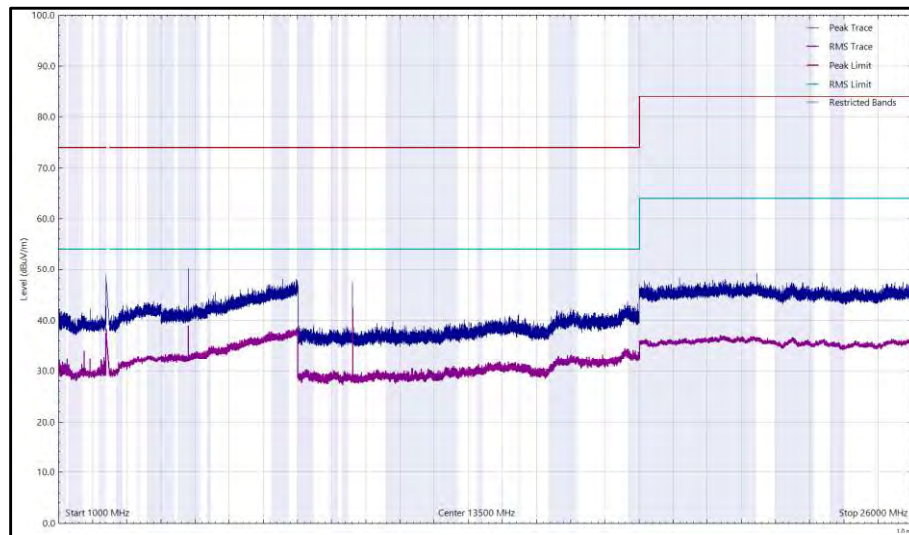


Figure 91 - Bot_Channel_MIMO_SDM_X Plane, 2401 MHz, 1 GHz to 26 GHz, Horizontal

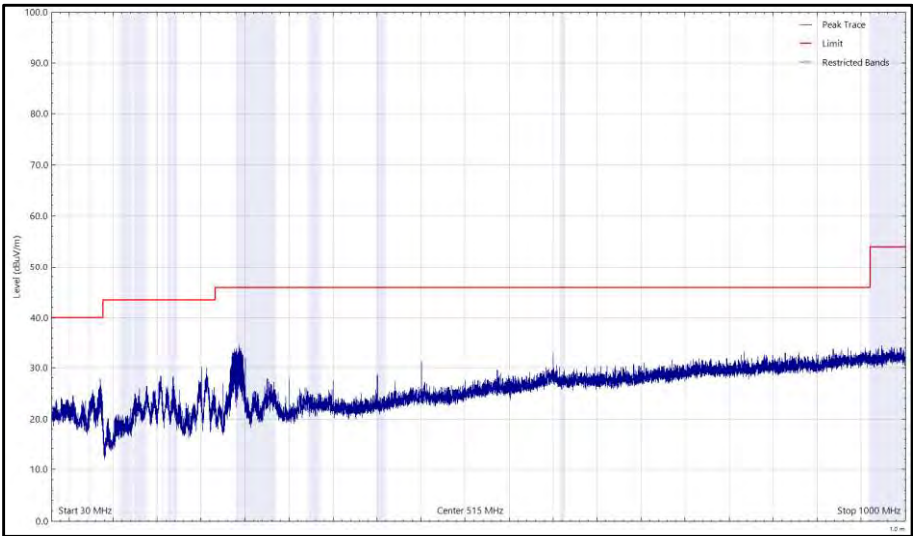


Figure 92 - Bot_Channel_MIMO_SDM_X Plane, 2401 MHz, 30 MHz to 1 GHz, Vertical (Peak)

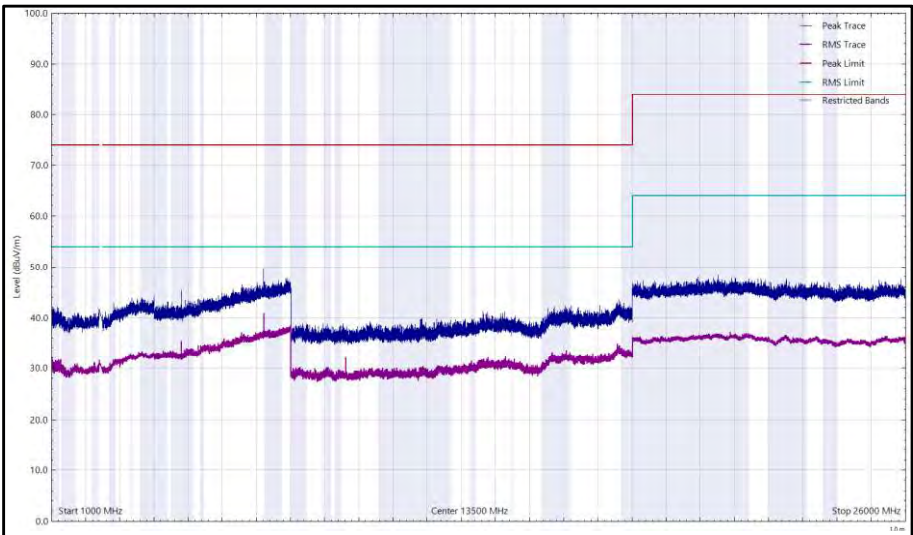


Figure 93 - Bot_Channel_MIMO_SDM_X Plane, 2401 MHz, 1 GHz to 26 GHz, Vertical



Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 94 - Top_Channel_MIMO_SDM_X Plane, 2482 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

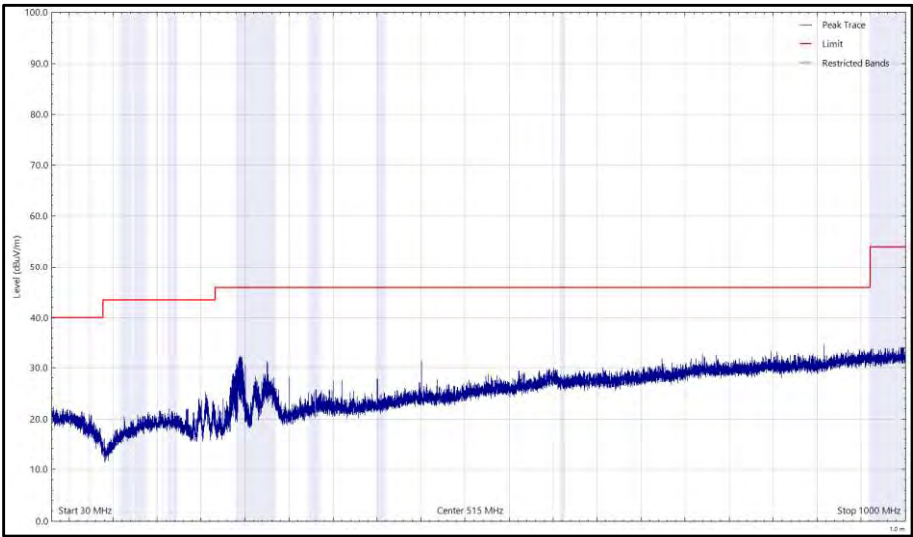


Figure 94 - Top_Channel_MIMO_SDM_X Plane, 2482 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

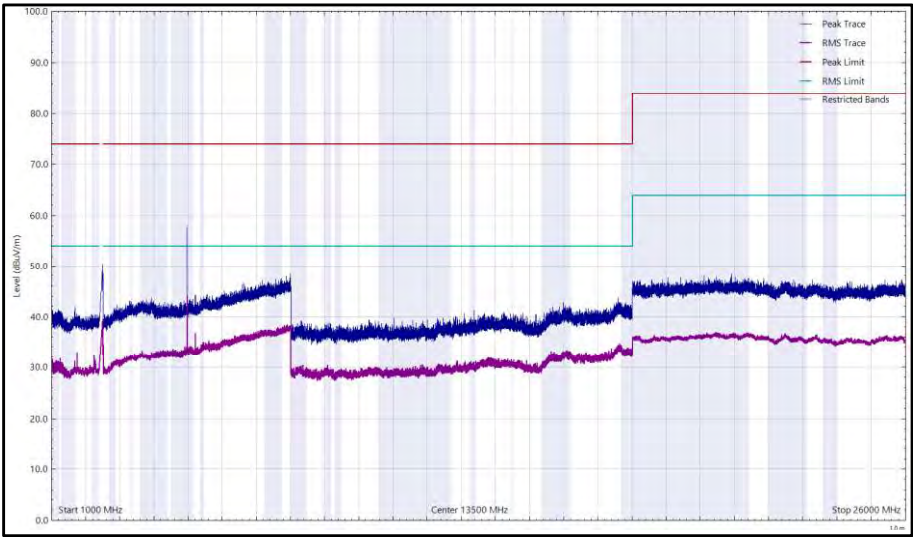


Figure 95 - Top_Channel_MIMO_SDM_X Plane, 2482 MHz, 1 GHz to 26 GHz, Horizontal

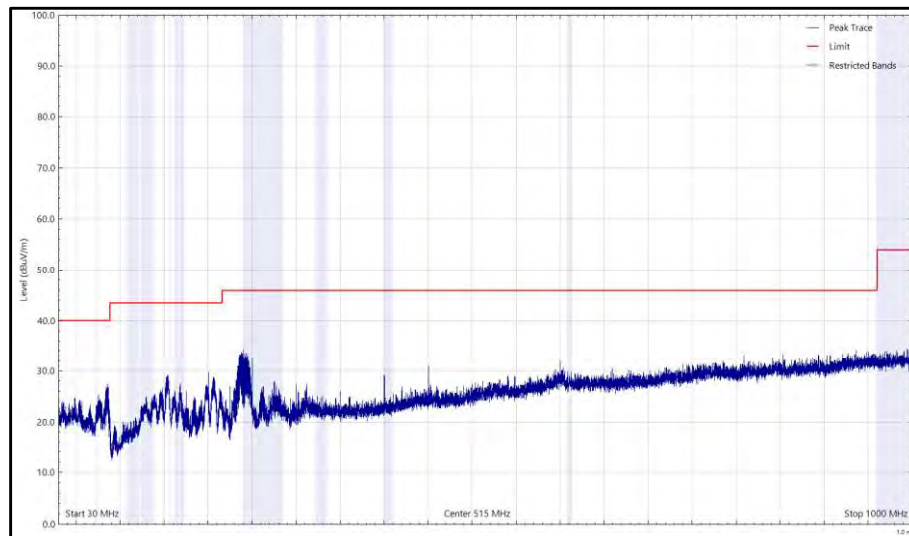


Figure 96 - Top_Channel_MIMO_SDM_X Plane, 2482 MHz, 30 MHz to 1 GHz, Vertical (Peak)

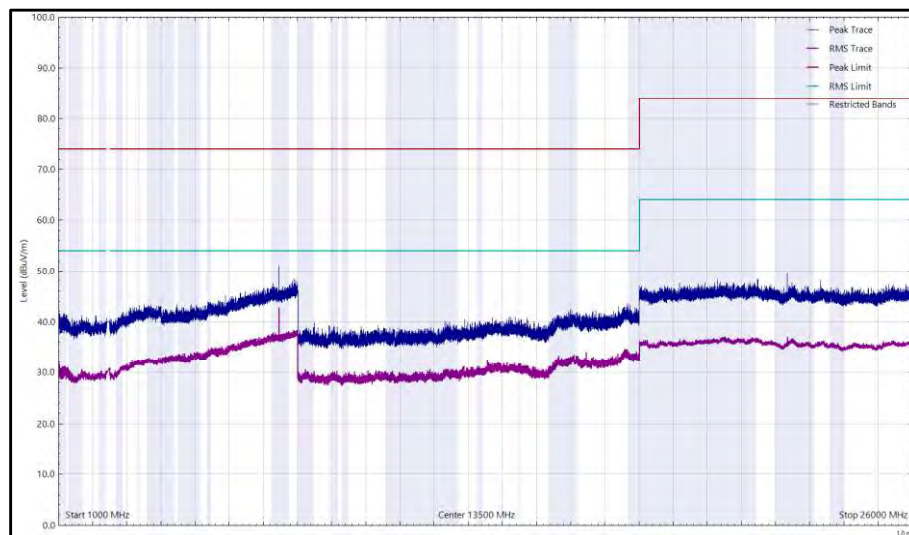


Figure 97 - Top_Channel_MIMO_SDM_X Plane, 2482 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 95 - Bot_Channel_MIMO_SDM_Y Plane Plane, 2401 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

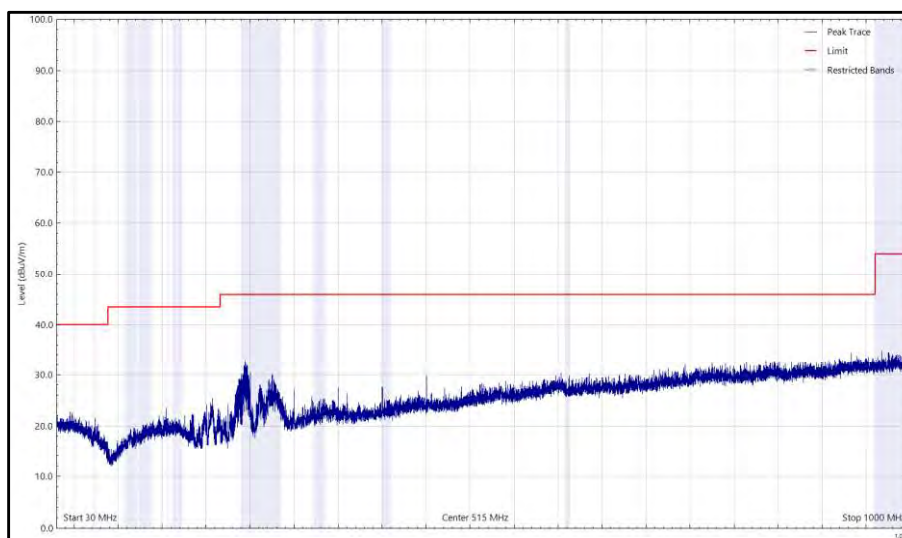


Figure 98 - Bot_Channel_MIMO_SDM_Y Plane, 2401 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

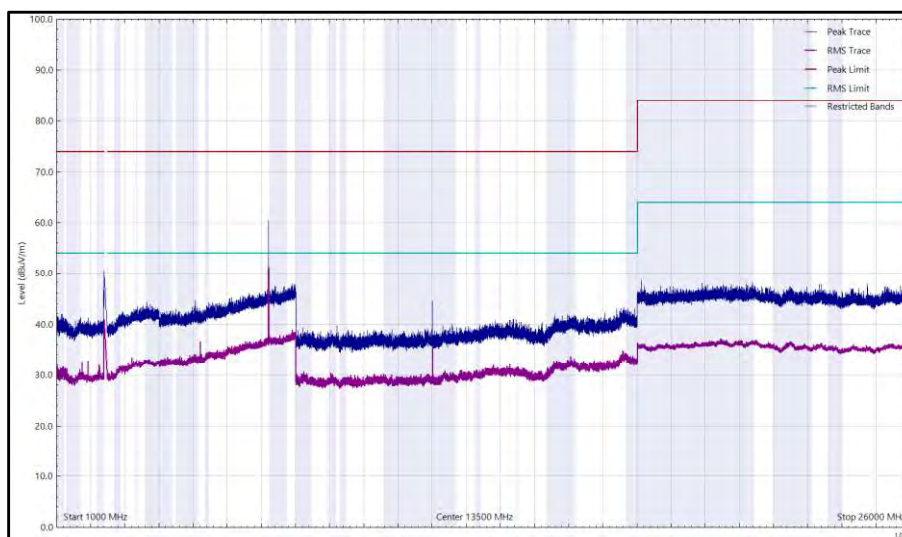


Figure 99 - Bot_Channel_MIMO_SDM_Y Plane, 2401 MHz, 1 GHz to 26 GHz, Horizontal

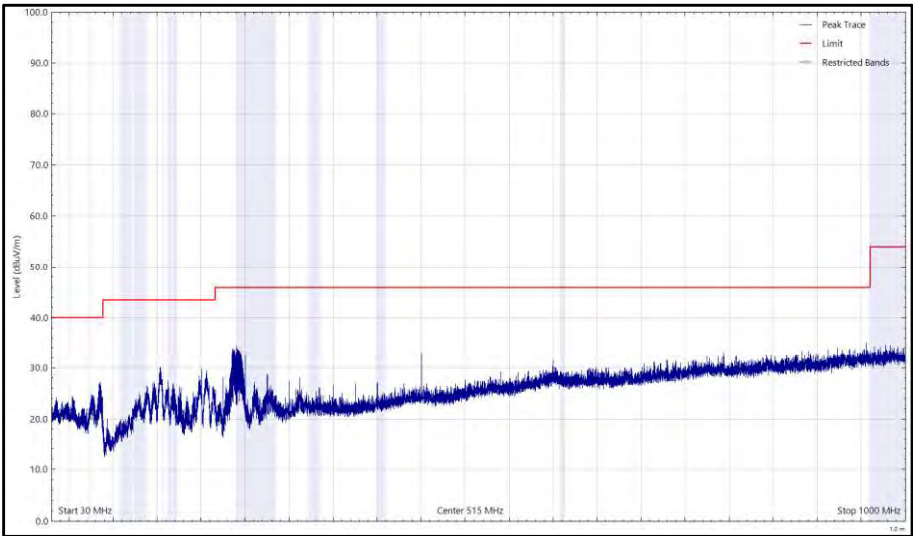


Figure 100 - Bot_Channel_MIMO_SDM_Y Plane, 2401 MHz, 30 MHz to 1 GHz, Vertical (Peak)

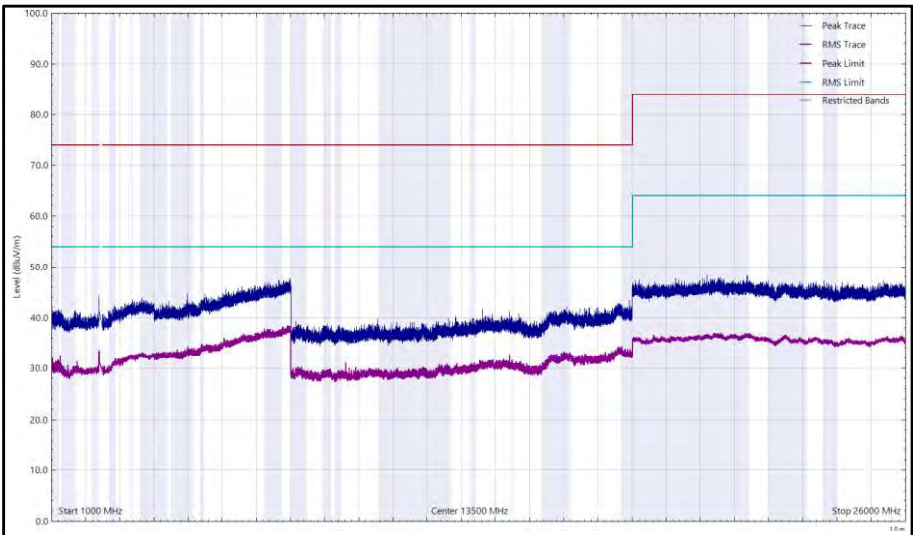


Figure 101 - Bot_Channel_MIMO_SDM_Y Plane, 2401 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 96 - Top_Channel_MIMO_SDM_Y Plane, 2482 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

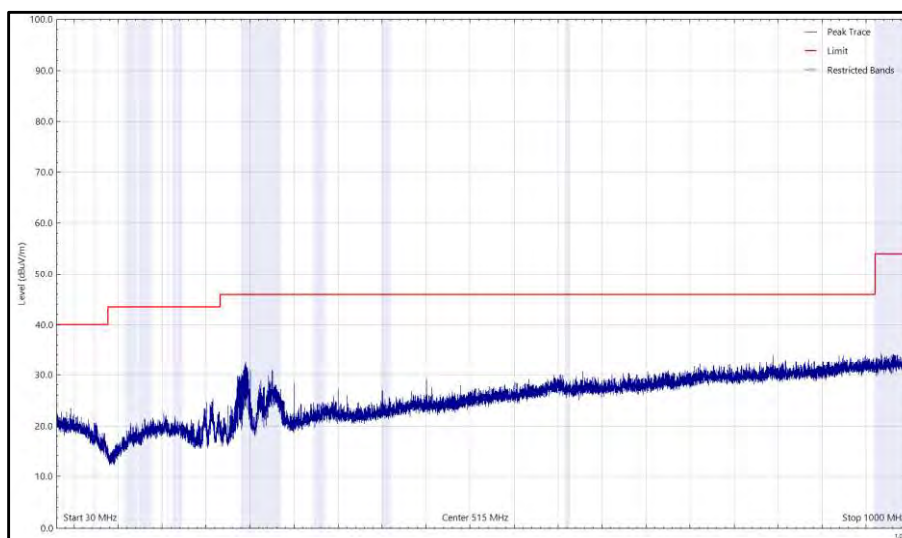


Figure 102 - Top_Channel_MIMO_SDM_Y Plane, 2482 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

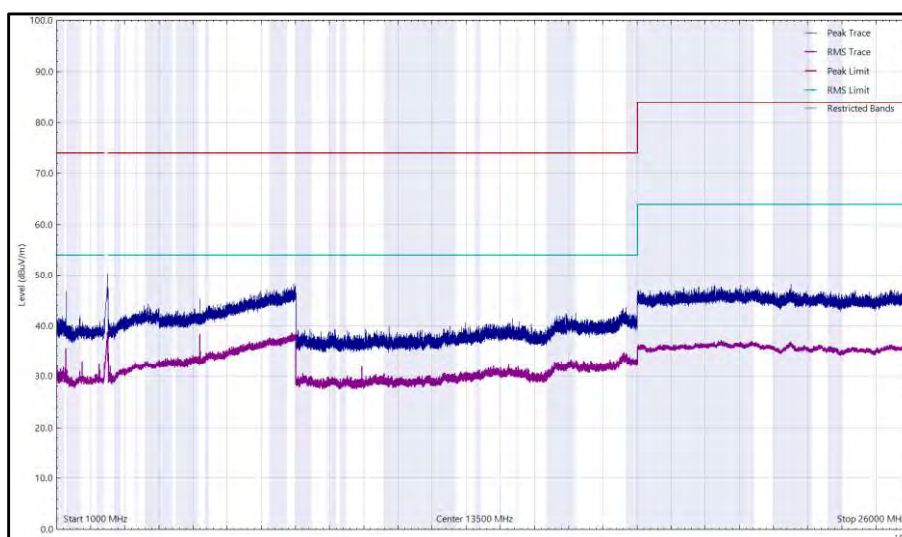


Figure 103 - Top_Channel_MIMO_SDM_Y Plane, 2482 MHz, 1 GHz to 26 GHz, Horizontal

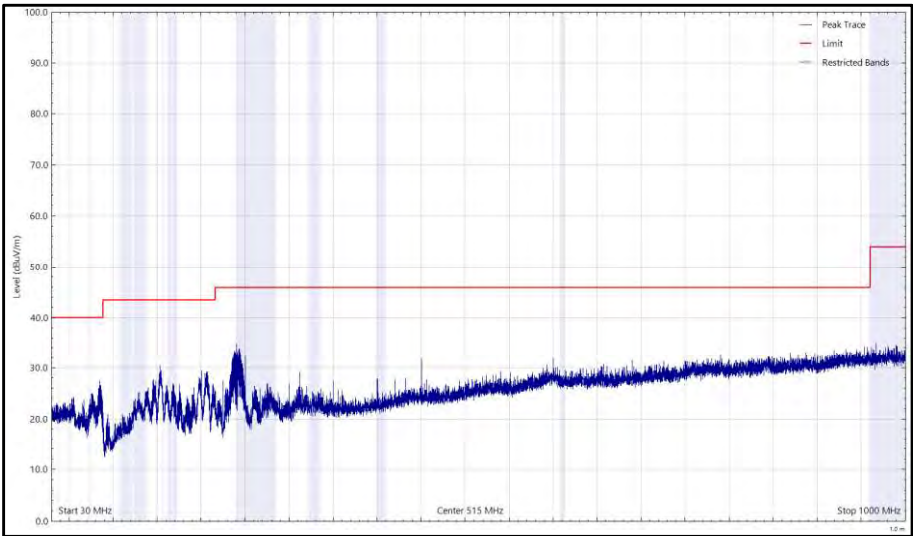


Figure 104 - Top_Channel_MIMO_SDM_Y Plane, 2482 MHz, 30 MHz to 1 GHz, Vertical (Peak)

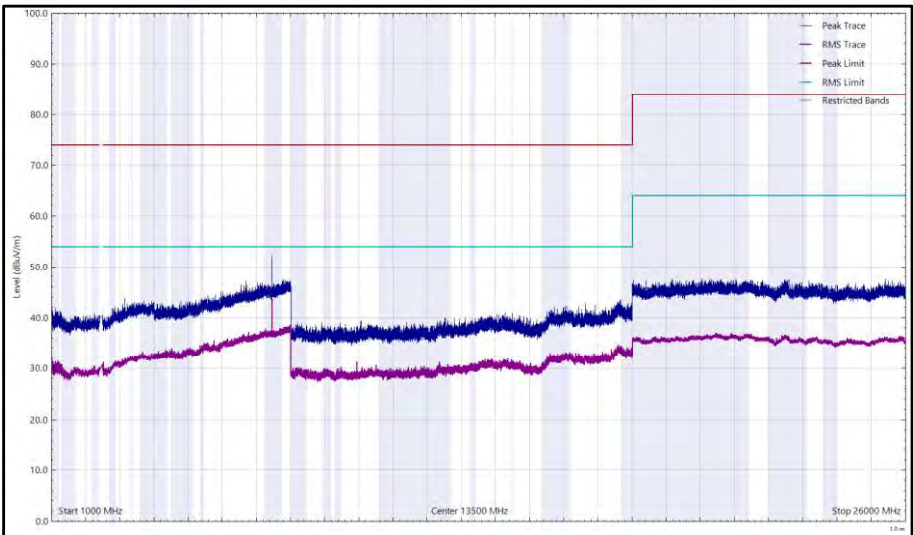


Figure 105 - Top_Channel_MIMO_SDM_Y Plane, 2482 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 97 - Bot_Channel_MIMO_SDM_Z Plane, 2401 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

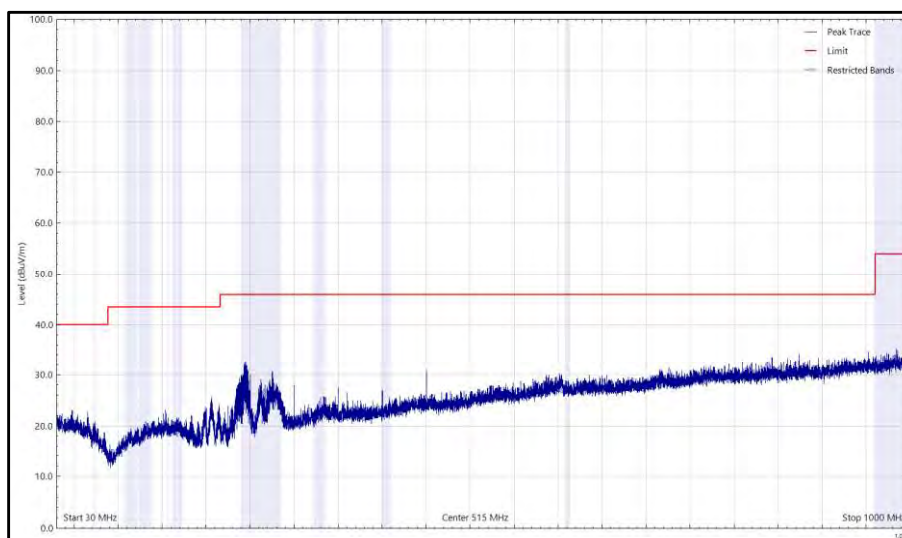


Figure 106 - Bot_Channel_MIMO_SDM_Z Plane, 2401 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

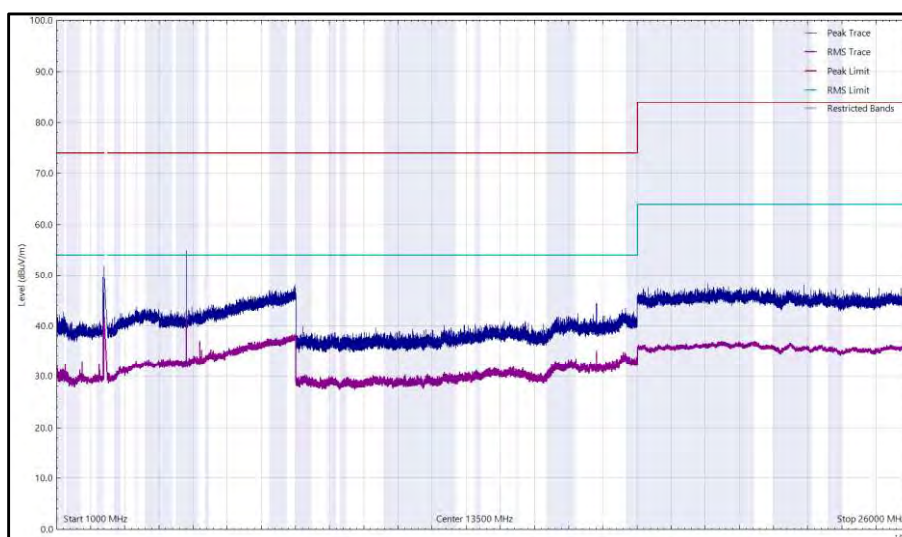


Figure 107 - Bot_Channel_MIMO_SDM_Z Plane, 2401 MHz, 1 GHz to 26 GHz, Horizontal

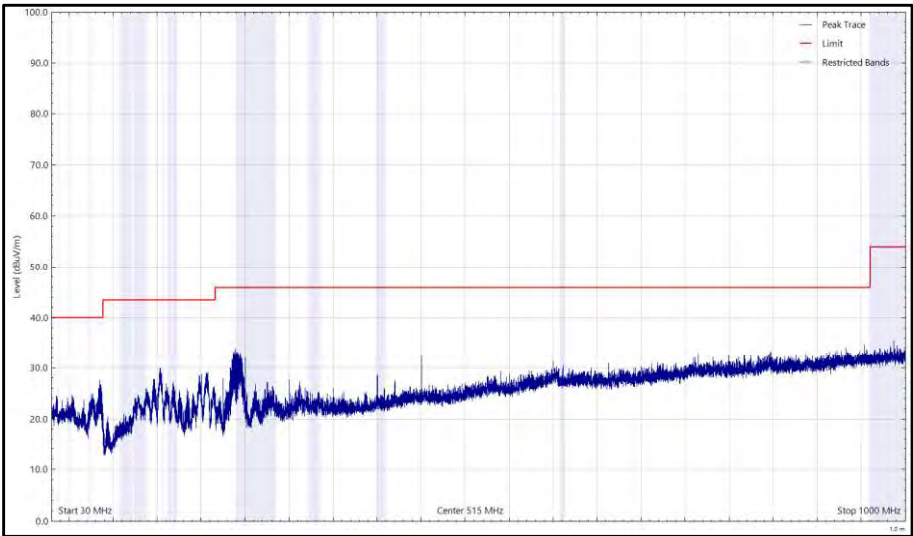


Figure 108 - Bot_Channel_MIMO_SDM_Z Plane, 2401 MHz, 30 MHz to 1 GHz, Vertical (Peak)

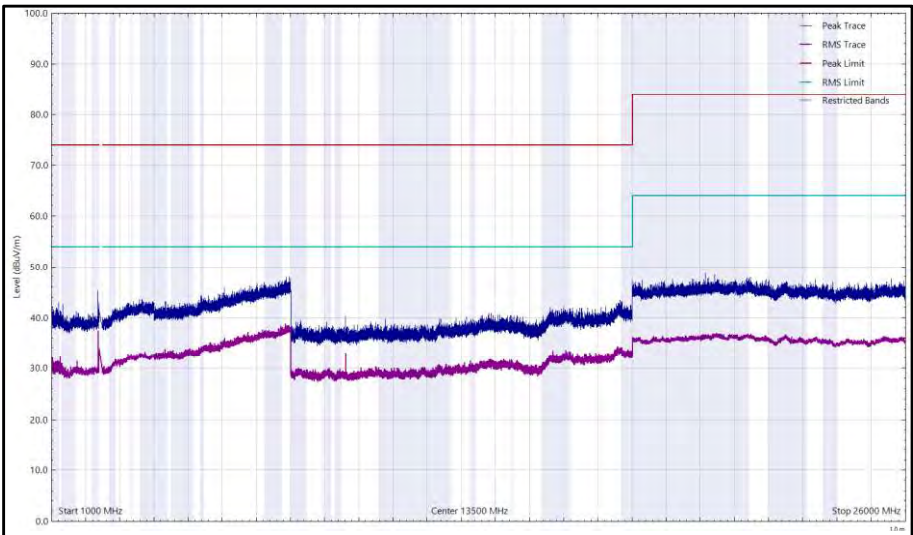


Figure 109 - Bot_Channel_MIMO_SDM_Z Plane, 2401 MHz, 1 GHz to 26 GHz, Vertical

Frequency (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Angle (°)	Height (cm)	Polarisation
*							

Table 98 - Top_Channel_MIMO_SDM_Z Plane, 2482 MHz, 1 to 26 GHz

*No emissions found within 10 dB of the limit.

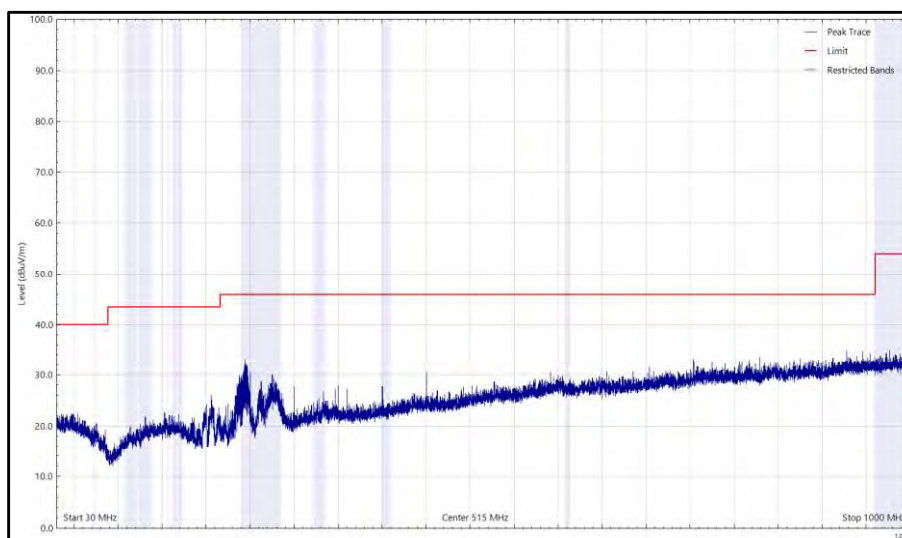


Figure 110 - Top_Channel_MIMO_SDM_Z Plane, 2482 MHz, 30 MHz to 1 GHz, Horizontal (Peak)

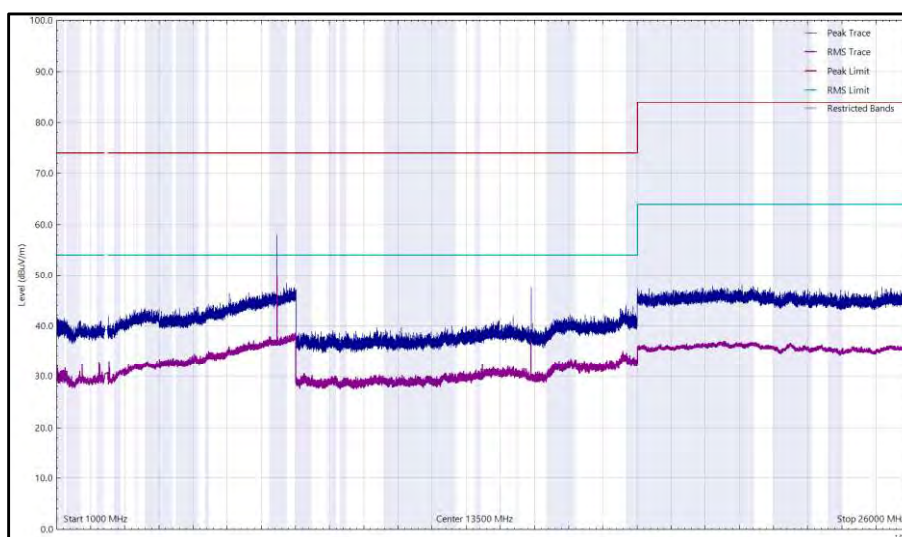


Figure 111 - Top_Channel_MIMO_SDM_Z Plane, 2482 MHz, 1 GHz to 26 GHz, Horizontal

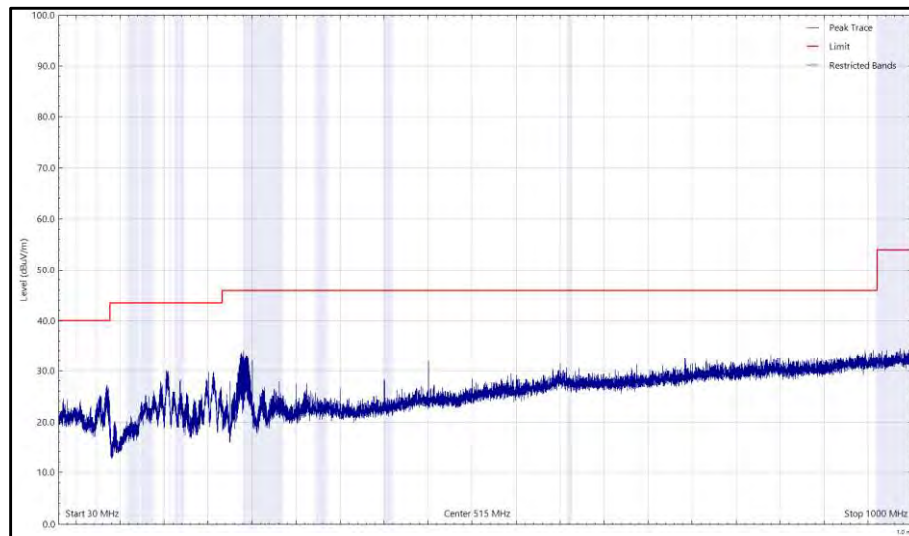


Figure 112 - Top_Channel_MIMO_SDM_Z Plane, 2482 MHz, 30 MHz to 1 GHz, Vertical (Peak)

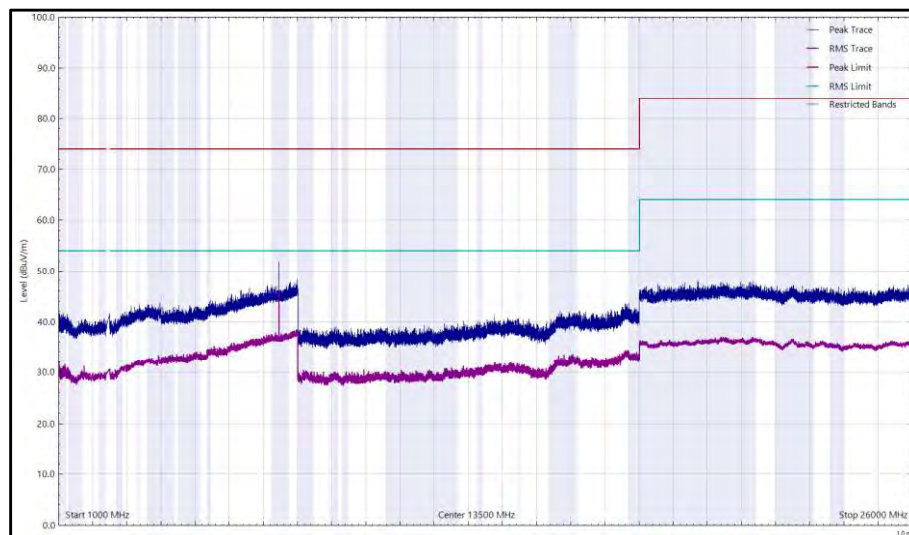


Figure 113 - Top_Channel_MIMO_SDM_Z Plane, 2482 MHz, 1 GHz to 26 GHz, Vertical



2.5.8 Test Location and Test Equipment Used

This test was carried out in RF Chamber 11.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
True RMS Multimeter	Fluke	179	4007	12	18-Nov-2023
High Pass Filter (4GHz)	K&L Microwave	11SH10-4000/X18000-0/0	4599	12	13-Oct-2023
Band Reject Filter - 2.425 GHz	Wainwright	WRCGV14-2390-2400-2450-2460-50SS	5066	12	20-Feb-2024
Band Reject Filter - 2.4585 GHz	Wainwright	WRCGV14-2423.5-2433.5-2483.5-2493.5-50SS	5068	12	07-Nov-2023
Test Receiver	Rohde & Schwarz	ESW44	5084	12	09-Aug-2023
Emissions Software	TUV SUD	EmX V3.1.12	5125	-	Software
Screened Room (11)	Rainford	Rainford	5136	36	24-Nov-2024
Mast	Maturo	TAM 4.0-P	5158	-	TU
Mast and Turntable Controller	Maturo	Maturo NCD	5159	-	TU
Turntable	Maturo	TT 15WF	5160	-	TU
Antenna (DRG, 1 GHz to 10.5 GHz)	Schwarzbeck	BBHA9120B	5215	12	09-Jul-2024
Antenna (DRG, 7.5 GHz to 18 GHz)	Schwarzbeck	HWRD750	5216	12	09-Jul-2024
Cable (K Type 2m)	Junkosha	MWX241-02000KMS	5421	12	08-Mar-2024
Pre-Amplifier (1 GHz to 26.5 GHz)	Agilent Technologies	8449B	5445	12	25-May-2024
Thermo-Hygro-Barometer	PCE Instruments	OCE-THB-40	5470	12	20-Apr-2024
Cable (SMA to SMA, 1 m)	Junkosha	MWX221-01000AMSAMS/A	5513	12	14-Apr-2024
Cable (SMA to SMA, 2 m)	Junkosha	MWX221-02000AMSAMS/A	5518	12	14-Apr-2024
Cable (N-Type to N-Type, 8 m)	Junkosha	MWX221-08000NMSNMS/B	5522	12	14-Apr-2024
7 GHz High pass Filter	Wainwright	WHKX12-5850-6800-18000-80SS	5551	12	30-May-2024
Pre-Amplifier (8 GHz to 18 GHz)	Wright Technologies	APS06-0061	5595	12	25-Oct-2023
Antenna (Tri-log, 30 MHz to 1 GHz)	Schwarzbeck	VULB 9168	5942	24	03-Feb-2024
Double Ridge Active Horn Antenna (18-40 GHz)	Com-Power	AHA-840	6189	24	02-Jun-2024
Attenuator (4 dB)	Pasternack	PE7074-4	6202	24	16-Jul-2024

Table 99

TU - Traceability Unscheduled



2.6 Power Spectral Density

2.6.1 Specification Reference

FCC 47 CFR Part 15C, Clause 15.247 (e),
ISED RSS-247, Clause 5.2
ISED RSS-GEN, Clause 6.12

2.6.2 Equipment Under Test and Modification State

SA4750, S/N: 062031- Modification State 0

2.6.3 Date of Test

10-August-2023 to 21-August-2023

2.6.4 Test Method

This test was performed in accordance with ANSI C63.10, clause 11.10.5.

Where the EUT duty cycle was < 98 % and repeatable within 2 %, the spectrum analyser was set to trace (power) averaging and a duty cycle correction was added as calculated in the result tables below (Method AVGPSD-2).

MIMO output port summing was performed in accordance with KDB 662911 D01 E)2)b).

2.6.5 Environmental Conditions

Ambient Temperature	22.3 - 22.6 °C
Relative Humidity	59.9 - 64.2 %



2.6.6 Test Results

2.4 GHz COFDM Digital Transceiver

Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	1.25 MHz	Duty Cycle (%):	8.9
-	-	DCCF (dB):	10.52
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2400.625	3.0	4.81	4.54	-	-	7.69	8.00	-0.31
2441.500	3.0	4.66	3.49	-	-	7.12	8.00	-0.88
2482.375	3.0	4.06	3.01	-	-	6.58	8.00	-1.42

Table 100 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	1.50 MHz	Duty Cycle (%):	10.2
-	-	DCCF (dB):	9.93
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2400.750	3.0	4.03	3.57	-	-	6.82	8.00	-1.18
2441.500	3.0	3.23	3.01	-	-	6.13	8.00	-1.87
2482.250	3.0	4.09	3.26	-	-	6.71	8.00	-1.29

Table 101 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	1.75 MHz	Duty Cycle (%):	10.1
-	-	DCCF (dB):	9.95
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2400.875	3.0	3.09	2.26	-	-	5.71	8.00	-2.29
2441.500	3.0	3.25	2.74	-	-	6.01	8.00	-1.99
2482.125	3.0	2.94	2.86	-	-	5.91	8.00	-2.09

Table 102 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	2.50 MHz	Duty Cycle (%):	10.2
-	-	DCCF (dB):	9.90
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2401.250	3.0	2.76	3.23	-	-	6.01	8.00	-1.99
2441.500	3.0	2.35	2.04	-	-	5.21	8.00	-2.79
2481.750	3.0	3.35	2.23	-	-	5.84	8.00	-2.16

Table 103 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	3.00 MHz	Duty Cycle (%):	10.4
-	-	DCCF (dB):	9.84
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2401.500	3.0	2.62	1.48	-	-	5.10	8.00	-2.90
2441.500	3.0	1.50	1.25	-	-	4.39	8.00	-3.61
2481.500	3.0	2.72	3.15	-	-	5.95	8.00	-2.05

Table 104 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	3.50 MHz	Duty Cycle (%):	10.4
-	-	DCCF (dB):	9.84
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2401.750	3.0	2.68	1.54	-	-	5.16	8.00	-2.84
2441.500	3.0	2.25	1.46	-	-	4.88	8.00	-3.12
2481.250	3.0	1.62	1.92	-	-	4.78	8.00	-3.22

Table 105 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	5.00 MHz	Duty Cycle (%):	9.1
-	-	DCCF (dB):	10.40
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2402.500	5.1	1.82	1.11	-	-	4.49	8.00	-3.51
2441.500	5.1	1.96	2.72	-	-	5.37	8.00	-2.63
2480.500	3.0	1.67	1.80	-	-	4.75	8.00	-3.25

Table 106 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	6.00 MHz	Duty Cycle (%):	8.7
-	-	DCCF (dB):	10.59
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2403.000	5.1	1.86	2.13	-	-	5.00	8.00	-3.00
2441.500	5.1	1.64	1.88	-	-	4.77	8.00	-3.23
2480.000	3.0	1.23	0.74	-	-	4.00	8.00	-4.00

Table 107 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	7.00 MHz	Duty Cycle (%):	8.0
-	-	DCCF (dB):	10.95
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2403.500	3.0	1.26	0.57	-	-	3.94	8.00	-4.06
2441.500	3.0	-0.31	0.09	-	-	2.90	8.00	-5.10
2479.500	5.1	1.05	1.37	-	-	4.22	8.00	-3.78

Table 108 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		

DUT Configuration			
Mode:	8.00 MHz	Duty Cycle (%):	100.0
-	-	DCCF (dB):	0.00
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2404.000	5.1	0.47	1.56	-	-	4.06	8.00	-3.94
2441.500	5.1	1.19	0.25	-	-	3.76	8.00	-4.24
2479.000	5.1	1.73	1.04	-	-	4.41	8.00	-3.59

Table 109 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	10.00 MHz	Duty Cycle (%):	9.9
-	-	DCCF (dB):	10.04
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2405.000	10.0	0.98	1.48	-	-	4.25	8.00	-3.75
2441.500	5.1	0.50	1.03	-	-	3.78	8.00	-4.22
2478.000	5.1	1.31	0.43	-	-	3.90	8.00	-4.10

Table 110 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	12.00 MHz	Duty Cycle (%):	7.6
-	-	DCCF (dB):	11.17
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2406.000	5.1	0.93	-0.36	-	-	3.34	8.00	-4.66
2441.500	10.0	1.67	1.91	-	-	4.80	8.00	-3.20
2477.000	10.0	1.85	2.42	-	-	5.15	8.00	-2.85

Table 111 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	14.00 MHz	Duty Cycle (%):	10.0
-	-	DCCF (dB):	10.01
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2407.000	5.1	-0.97	-1.98	-	-	1.56	8.00	-6.44
2441.500	10.0	1.76	1.87	-	-	4.83	8.00	-3.17
2476.000	5.1	-0.53	-1.12	-	-	2.19	8.00	-5.81

Table 112 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	16.00 MHz	Duty Cycle (%):	4.5
-	-	DCCF (dB):	13.52
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2408.000	3.0	0.58	-0.18	-	-	3.22	8.00	-4.78
2441.500	5.1	-0.96	-3.33	-	-	1.02	8.00	-6.98
2475.000	10.0	1.04	0.70	-	-	3.88	8.00	-4.12

Table 113 - Maximum Power Spectral Density Results



Test Configuration			
Frequency Range:	2400-2483.5 MHz	Band:	2.4 GHz
Limit Clause(s):	15.247 (e) RSS-247 5.2 b)	Test Method(s):	C63.10 11.10.5
Additional Reference(s):	662911 D01 v02r01 E)2)b)		
Note(s):	DCCF was added to the spectrum analyser reference level offset.		

DUT Configuration			
Mode:	20.00 MHz	Duty Cycle (%):	6.0
-	-	DCCF (dB):	12.19
Antenna Configuration:	MIMO SDM	Peak Antenna Gain (dBi):	-
Active Port(s):	A+B (A + B)	Active Chain(s):	0+1

Test Frequency (MHz)	RBW (kHz)	PSD (dBm/RBW)					Limit (dBm/3 kHz)	Margin (dB)
		A	B	C	D	Σ		
2410.000	5.1	-0.37	-0.26	-	-	2.70	8.00	-5.30
2441.500	10.0	0.21	0.82	-	-	3.54	8.00	-4.46
2473.000	10.0	1.22	0.32	-	-	3.80	8.00	-4.20

Table 114 - Maximum Power Spectral Density Results

FCC 47 CFR Part 15, Limit Clause 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

ISED RSS-247, Limit Clause 5.2(b)

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission



2.6.7 Test Location and Test Equipment Used

This test was carried out in RF Laboratory 1.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Expires
Hygrometer	Rotronic	I-1000	3220	12	15-Nov-2023
Frequency Standard	Spectracom	SecureSync 1200-0408-0601	4393	6	08-Feb-2024
MXA Signal Analyser	Keysight Technologies	N9020B	5528	24	21-Mar-2024
Signal Conditioning Unit	TUV SUD	SPECTRUM_SCU001	6350	-	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6638	12	26-Jul-2024
SCU Cable Assembly SCU	TUV SUD	SPECTRUM_SCU_CA	6639	12	26-Jul-2024

Table 115

3 Photographs

3.1 Test Setup Photographs

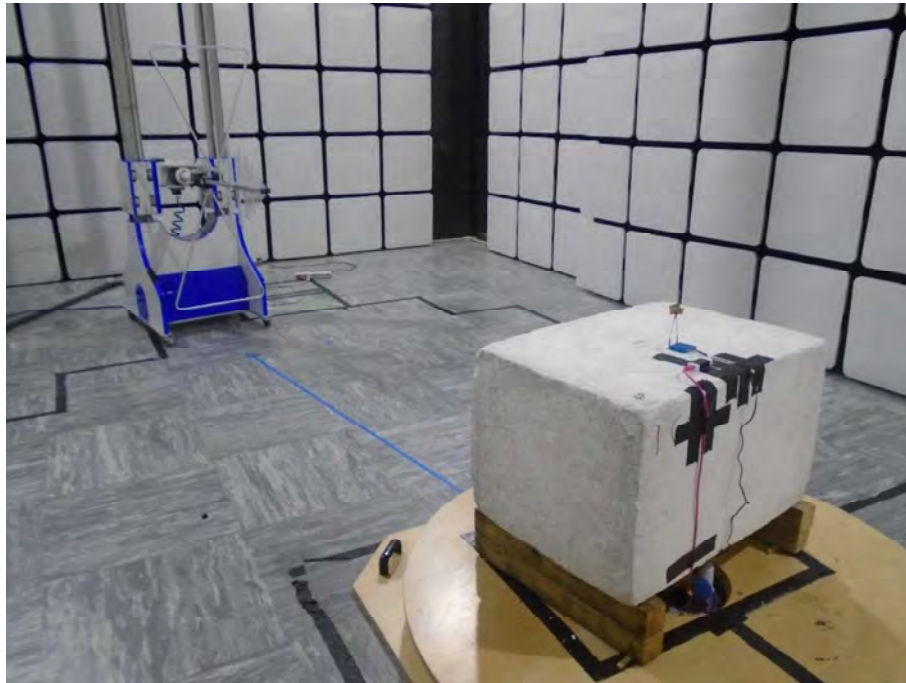


Figure 114 – 30 MHz to 1 GHz

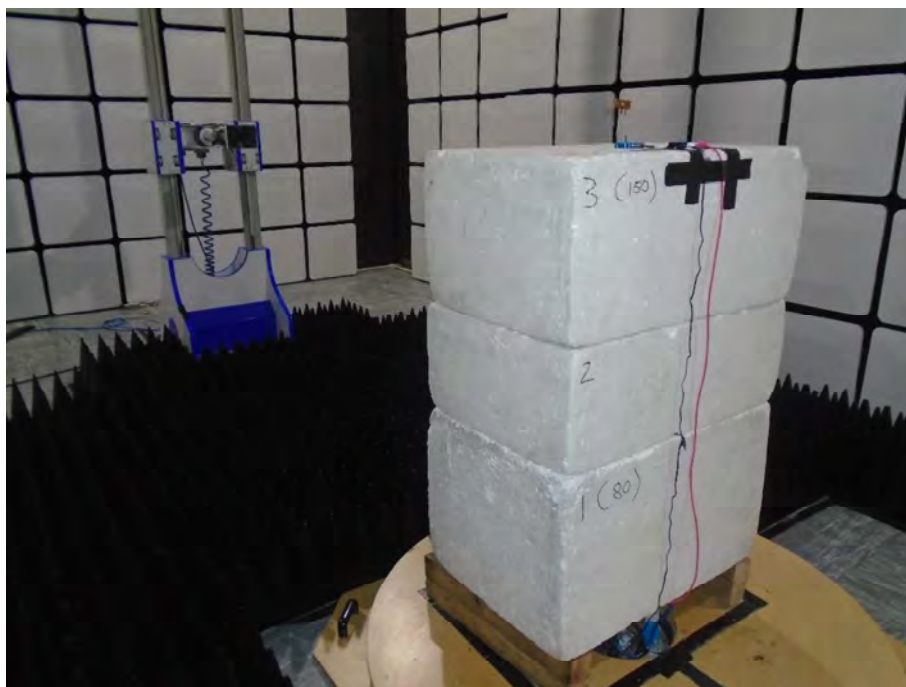


Figure 115 – 1 GHz to 18 GHz

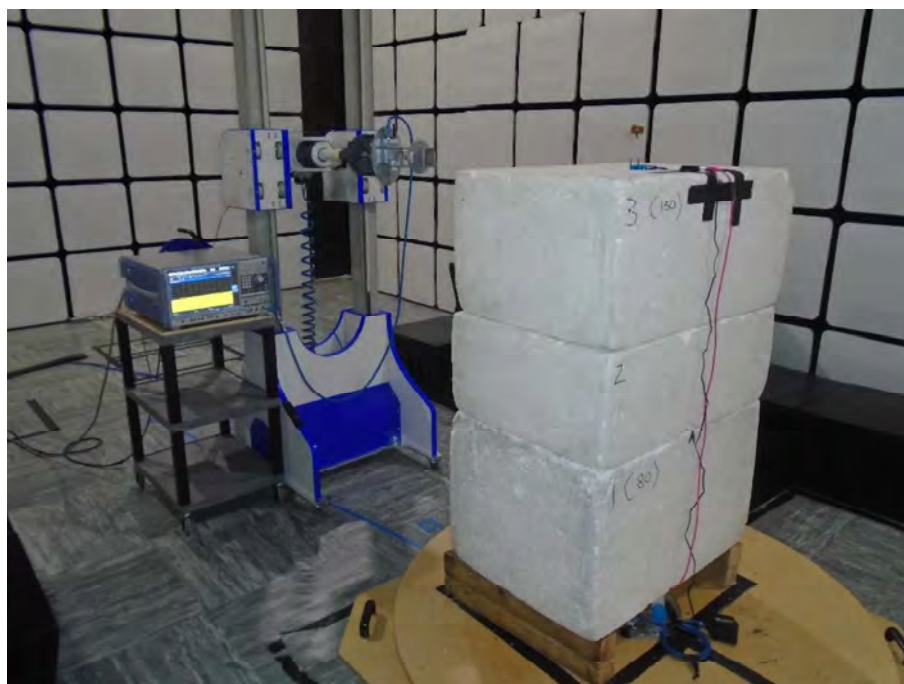


Figure 116 – 18 GHz to 26 GHz



4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Restricted Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Emission Bandwidth	± 183.49 kHz
Maximum Conducted Output Power	± 1.38 dB
Authorised Band Edges	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Spurious Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB
Power Spectral Density	± 1.49 dB

Table 116

Measurement Uncertainty Decision Rule – Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2021, Clause 4.4.3 (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8.